

III.—*On the Birds of Gilgit.* By MAJOR JOHN BIDDULPH*.

THE birds enumerated in the following list were collected during a residence of two years in Gilgit, a tract of country the ornithology of which has not yet been studied. As Gilgit is known but to few, a brief sketch of the locality will be useful.

In the north-west corner of the Cashmere dominions, where the Indus, after a north-north-west course of nearly five hundred miles, makes a sudden turn to the south, the Gilgit river joins the great stream on the right bank, after draining a very large extent of country north and west of the Indus. Its most western source is in the mountains at the head of the Swat valley. Further east a large affluent joins it in Yassin, which takes its rise in the Hindoo Koosh. Along this stream migrants from the Oxus valley find their way to the Indus. Further east still is its third and largest affluent, the Hunza river, of which one of the branches rises on the southern slope of the mountains that enclose the Taghdoughash Pamir, and the other on the western slope of the mountains that form the watershed between it and the valley of the Yarkund river. All around rise snow-clad mountains of great height, the ridges being from 13,000 feet to 17,000 feet above sea-level, while the number of lofty peaks and glaciers is not equalled by any tract of similar extent in the Himalayas.

Twenty-four miles from the Indus, at an elevation of little less than 5000 feet, is the fort of Gilgit. The valley, which is here about two miles broad, is barren and rocky, save in the spots of cultivation, which are few and far between. The cultivated spots themselves are thickly wooded. Higher up the valley contracts, and the cultivated spots are nearer together. The base of the mountains consists of precipitous bare rock; but above 7000 feet deep glens, pine-forests, and grassy slopes meet the eye everywhere up to the snow-

* [Dr. J. Scully, who is so often referred to by Major Biddulph, has kindly added some footnotes to this paper, which are distinguished by his initials.—EDD.]

line. The climate is dry, and subject to great extremes ; the rain and snow, which fall abundantly at the higher elevations, seldom reach the main valley in any quantity. The rainfall of the year is only about five inches. The winter lasts about four months, during which there are six weeks of intense dry cold, when the thermometer in the open air goes down to zero.

Owing to the great radiation from the rocks, the heat in summer for about two months is very great ; but the nights are cool, and the heat is never trying as in India.

It will be observed that the greater proportion of birds in the list are migratory, the constant residents being very few. It is probable that many migrants still remain to be added to the list ; for it is curious of how many species only single specimens were secured. Abnormal weather is also likely to bring in birds not seen at other times, and to detain birds on passage that would not otherwise be noticed. The winter of 1877-78 was remarkably severe ; snow began to fall heavily in October, and continued without intermission till the middle of January, forming the heaviest snow-fall known for fifty years. This brought in a number of species that remained the whole winter, many of which were never seen in the succeeding winter, and others only rarely.

There can be little doubt that in such a mountainous country the lines of migration are along the valleys ; and so many northern species use this road on their way to and from India, that further observations at this point might furnish useful information on the migration of different birds. Some, like the Bluethroat, stay for more than a month on their way through in spring, before going on to their breeding-grounds. Others "come like shadows, so depart," like hasty travellers hurrying on to their journey's end. Of the *Saxicolæ* the males of *S. picata* appear in great numbers for over a fortnight before the females, after which the greater number vanish, and only a few remain to breed. Notwithstanding these eccentricities, the few dates of arrival and departure which I was enabled to note seem very regular. *Passer indicus* appeared each year on the same day ; so did

Fringilla montifringilla. Others were first noted within two or three days of the same date in each year; and the irregularity was possibly as much due to the observer as to the birds.

In my list will be noticed a few species the right of which to be classed among our Indian avifauna has been questioned, such as *Fringilla montifringilla* and *Emberiza hortulana*; but the seasons at which they were observed make it evident that their migration was from the south. Others, such as *Lep-topæcile sophiæ* and *Leucosticte brandti*, are altogether new to our lists of birds found south of the great watershed that divides us from Central Asia.

The neighbouring valley of Darel, which has not yet been visited by any European, appears to possess a different vegetation and soil from all the surrounding valleys. It is doubtless owing to this that the occurrence of stragglers of the stamp of *Coccystes jacobinus*, *Oreæcetes cinclorhynchus*, and *Buchanga longicaudata* is due.

The autumn migration begins, apparently, as nearly as possible on 15th August, the first birds to appear being the Snippets and Sandpipers. In the last three days of August 1879 a heavy fall of snow took place in the mountains above 11,000 feet, and drove down a great number of Cuckoos, Kites, Swifts, Crows, and Harriers of three kinds.

In both years I was unavoidably absent during the latter part of the autumn migration, and am indebted to Dr. Scully for a notice of species procured by him after my departure, which had not previously been recorded by me. I have also to acknowledge my thanks to Dr. Scully for many interesting remarks regarding other species, of some of which I had failed to procure specimens, but which he had succeeded in obtaining before my departure. It was only by the assistance of a large series of *S. picata*, collected by him in addition to my own, that the curious facts regarding the change of colour of this bird were determined beyond doubt.

Specimens of every bird on the list have been obtained, except in a few instances, which have been duly noted. The list is confined to birds obtained in the Gilgit district itself—

that is to say, in the main valley for forty-three miles from the Indus, and in the side valleys within that rise up to their crests, except the great Hunza valley, of which only the lower twenty miles belong to Gilgit. By going higher up the main valley, and taking in a larger area, more species might be recorded; but the list would lose in completeness without gaining in interest.

The large number of specimens brought away by me has been carefully gone through by my friend Captain G. F. L. Marshall, who has taken a large share in the preparation of this paper. In some cases he has added notes of his own, as designated by his initials; and I am indebted to him for the identification of many species.

1. VULTUR MONACHUS, Linn.

Not common. I saw a pair soaring over a dead ibex on the 5th May, at about 12,000 feet elevation, among more than a hundred *Gyps himalayensis*. The black colour and square appearance made them very conspicuous.

2. GYPS FULVESCENS (Hume)*.

A summer visitor only. One, a female, shot in July, and many others seen. On 5th May, out of over a hundred Vultures observed closely over a dead ibex, not a single one of this species was noticed.

3. GYPS HIMALAYENSIS (Hume).

Very common in summer at over 10,000 feet, in winter at 6000 feet. On one occasion I had a snap-shot at a Markhor going up the hill-side, and thought I had missed. Immediately two of these birds came and perched close by. This caused me to send a man up to look; and he found the wounded beast walking slowly along, shot through the brisket, which had not been enough to disable it. The big birds had spotted it at once.

4. NEOPHRON PERCNOPTERUS (Linn.).

I saw a single *Neophron* on the 21st April, 1879, which I

* [This species is, I believe, entered here through an error for which I am responsible. Major Biddulph's specimen seems to be an immature brown-coloured example of *G. himalayensis* (Hume).—J.S.]

believe to have been *N. percnopterus*, from its appearing larger than *N. ginginianus*, and having darker bill and wings. I had a good view of it at about twenty-five yards for some minutes. Severtzoff mentions it in Central Asia, whence this was, no doubt, a straggler, like *Lanius homeyeri* and others. I never saw another.

5. *GYPÆTUS BARBATUS* (Linn.).

The Bearded Vulture is very common at all times of the year. In the summer it is generally seen at a mean elevation of about 8000 feet; in winter it comes low down, and may often be seen seeking its food close to habitations.

6. *FALCO PEREGRINUS*, Tunst.

Always about on the faces of rocky precipices. A number are caught always in October, which is the great season for catching them. I procured one specimen, a male, just commencing to get the grey feathers on the back, shot on the 14th April, at an elevation of 5000 feet. Dimensions as follows—length 16·5 inches, expanse 38·2, wing 12·4, tail 6·7, tarsus 1·85, middle toe 2, culmen 0·8, bill from gape 1·25. Cere and legs greenish yellow; irides dark brown. Weight 1 lb. 4 oz.

The Peregrines breed in the neighbourhood of Gilgit at about 6000 feet, on the face of precipices. A few remain throughout the winter; but the greater number leave in the autumn.

7. *FALCO SUBBUTEO*, Linn.

A summer visitor. It arrives about the end of April, and is very common throughout the summer; it appears to breed at about 9000 feet elevation.

8. *FALCO ÆSALON*, Tunst.

Tolerably common, but not venturing, as a rule, far from the mouths of the ravines leading up to the high mountains, except in the depth of winter. The dimensions of a male are—length 11 inches, wing 7·7, tail 5·2, tarsus 1·4; and of a female the wing measures 8·85. The latter is much paler than the male specimen, and appears more fully adult; the

blackish tinge on the grey of the head and shoulders has almost entirely disappeared.

9. *CERCHNEIS TINNUNCULUS* (Linn.).

A few seen all through the winter. In summer it appears in great numbers, especially about harvest-time, when I have counted upwards of twenty together hovering over a newly reaped cornfield, hunting for mice.

10. *ASTUR PALUMBARIUS* (Linn.).

A number are caught yearly in all the neighbouring valleys, and higher up in the Gilgit valley; but I never shot one, and only once saw a pair, in Gilgit itself.

White ones are occasionally caught, and considered a great prize. I saw one that had been caught in Wakhan and was being conveyed to Agha Khan, in Bombay. Birds in this phase of plumage are called "Taighoon," a name given to all albinos.

11. *MICRONISUS BADIUS* (Gmel.).

One adult specimen shot 25th April, which apparently belongs to the pale race to which Severtzoff gave the name of *Astur cenchroides*.

[The plumage of this specimen is in a very remarkable stage: it is of a pale tone throughout; and the ferruginous bands on the upper breast are continued into a broad conspicuous collar of ferruginous buff completely encircling the neck, and contrasting with the brownish grey of the head and upper back, into which it shades above and below. The outer tail-feathers are banded as in the specimen described by Blanford in his 'Zoology of Eastern Persia,' no. 18, p. 108, as *Astur cenchroides* (?); and the present specimen agrees well with the description throughout, except that the barring of the lower surface is narrower and closer—in this respect agreeing with Indian examples of *M. badius*, to which species it is doubtless referable. Sex male. Dimensions—length 13·6 inches, expanse 32·65, wing 7·8, tail 6·5, tarsus 1·63, culmen 0·5, middle toe 1·15. Weight 5·25 oz. Irides bright orange, cere yellowish green, legs horny green, feet

dull yellow. A young male of this species shot on 1st September is identical with other Indian examples.—G. F. L. M.]

12. *ACCIPITER NISUS* (Linn.).

Very common, except in the depth of winter. I took a nest and four hard-set eggs on the 23rd June. The nest was in a fir tree, about thirty feet from the ground, at an elevation of about 10,000 feet. The collection contains a very fine series of these birds, eleven females and eight males.

13. *ACCIPITER MELASCHISTUS*, Hume.

The collection contains one specimen which, if the sex is rightly ascertained, is clearly referable to this species. Unfortunately the determination of sex was made by one of the native collectors; but as the man had had many years' experience, and the bird was killed in July, it seems hardly credible that a mistake should have been made.

Sex male. Wing just short of 10 inches, tail 8·5. The claws are decidedly larger and more powerful than in female specimens of *A. nisus* of similar general dimensions; and the plumage agrees closely with Hume's original description.

14. *AQUILA CHRYSÆTOS* (Linn.).

To be seen at all times of the year, generally in pairs. I have constantly seen them stoop at Partridges (*Caccabis chukor*).

Many young ones, conspicuous by the white tail, noticed in winter-time, hunting these Partridges.

15. *NISAETUS PENNATUS* (Gmel.).

In March and April a number are seen for a short time. Not noticed at any other time. A few specimens were secured in these months. One, a male, is in the plumage figured by Dresser in the 'Birds of Europe,' except that the whole of the sides of the neck and the throat are brown, each feather centred darker, but palest in the middle of the throat. Length 20·25 inches, wing 14·5, tail 9, tarsus 2·5. Weight 1 lb. 8 oz. Cere pale yellow; irides pale red.

16. *PANDION HALIAETUS* (Linn.).

An Osprey was observed by me, at intervals of about three

weeks, in the vicinity of a small marsh; but it was so wary that for a long time I failed to get a shot at it. It proved to be a male in almost adult plumage. Its stomach was full of a watery fluid, and contained a number of small wireworms about two inches long; and the bird was extremely fat. This was in March. I have once or twice fancied that I have identified the bird at other times in winter; but it is certainly not common.

17. *BUTEO FEROX* (Gmel.).

Extremely common in the main valley in winter. In the summer it ascends to the higher valleys, and breeds apparently at about 10,000 feet. All specimens, both of this Buzzard and *B. plumipes*, shot during the winter had large balls of a hard gummy substance firmly attached to their claws, which must considerably interfere with their grasping their prey.

18. *BUTEO PLUMIPES*, Hodgs.

A winter visitant, not very common; three specimens were shot about January.

A male, in early adult plumage, corresponds fairly with the description in Sharpe's Catalogue (i. p. 181); but on the breast the feathers entirely lack the black shaft-stripe, the shaft being black only; each feather on the chest is dark rufous with a bluish tinge, and with a paler and brighter margin. On the upper surface the dark purplish gloss is confined to the mantle. Expanse 49·5 inches, length 20·3, wing 15·7, tail 9·4, tarsus 2·6, bill at gape 1·55. Weight 1 lb. 10 oz.

None of the specimens observed or obtained were in the dark ferruginous plumage figured in Sharpe's Catalogue (vol. i.); all were of the "*B. japonicus*" type.

19. *CIRCUS CYANEUS* (Linn.).

Single birds seen at intervals during the winter. In March it becomes more common, and disappears in the beginning of May. One adult female, killed while carrying off a chicken, measured—length 21·5 inches, wing 15·5, tail 10·75, tarsus 3; cere yellow, legs bright yellow. One male in immature

plumage, shot in December, and two adult females, shot in March and April, had the irides light yellow.

20. *CIRCUS MACRURUS* (Gmel.).

Appears at the beginning of April, during which month it is very common, disappearing about the middle of May. It appears again for a short time at the end of September, on its way south. I shot a female (while devouring a half-grown chicken it had carried off) which measured—length 19 inches, wing 13·85, tail 9·5, tarsus 2·65; irides light brown. In this specimen Mr. Hume's diagnosis (see 'Stray Feathers,' vol. i. p. 160) does not hold good, the third and fourth quill being equal, while in the other specimens it does hold good.

Two males shot in April and October in immature plumage; both had the irides gamboge-yellow.

21. *CIRCUS CINERACEUS* (Mont.).

Not common, and only appearing in spring and autumn. An adult female shot 19th March measures—length 18·5 inches, wing 15·15, tail 10·4, tarsus 2·36; iris orange-yellow, bill black, legs yellow.

A male in not quite adult plumage was also shot by Dr. Scully.

22. *CIRCUS ÆRUGINOSUS* (Linn.).

The collection contains twelve specimens, of which four are females and eight males.

One of the former, shot in April, is in the uniform chocolate stage of plumage, with the throat and top of the head and nape buff, sharply defined; the feathers on the head dark-centred, while those of the throat are merely inconspicuously dark-shafted, the lower ones being nearly white. The other three specimens, shot on the 13th and 29th March and 23rd April respectively, show, in addition to the buff patches described above, a more or less complete broad luteous band across the lower breast, while on the mantle, back, and wing-coverts many of the feathers are broadly margined with this colour, some being entirely luteous white, with dark centres. The irides were dark brown, and the cere pale

greenish yellow. Length 22·5 to 23 inches, wing 16 to 16·75, tail 10·5, tarsus 3·25 to 3·75.

The eight males all have the grey tails, and grey on the wings, and were all shot between the 9th March and the latter end of April. The under surface varies from chocolate-brown, nearly uniform on the abdomen, and margined with rufescent on the throat and breast, to rufescent white with narrow dark centres. The irides light yellow. Length 20·5 to 21·5 inches, wing 15·75 to 16, tail 10, tarsus 3·25 to 3·5.

This Harrier appears to soar and hover often at a considerable height, as a Kite does. It was not noticed in the depth of winter. At the beginning of March a number appear, all of which are in adult plumage; these disappear in April, and are succeeded by birds in immature plumage, which arrive in great numbers throughout April, getting scarcer in May. A few remain throughout the summer; and in the middle of August adult birds begin to reappear, having apparently bred higher up, but not far off; by the middle of November all have left the valley. In one instance a female was brought to Dr. Scully, alive, which had struck a Coot (*Fulica atra*) in the water; during the struggle a native waded in and secured both birds.

23. MILVUS GOVINDA (Sykes).

None are visible during December and January; but on the 8th February I shot one specimen, after which it becomes common.

This Kite agrees, as regards habits, with the description of *M. melanotis* as given in 'Stray Feathers' by Brooks, but does not quite come up to Hume's measurements. It is much shyer than the Indian Kite, and avoids habitations, hunting about the fields, often in large flocks of fifty or sixty. On the 22nd February I saw a large flock of over 300, that appeared to be just arriving; and for many days afterwards they were seen in flocks of twenty or thirty, the flocks gradually getting small till about the end of April, when they disappeared. A single one was seen 29th August, in heavy weather.

[This Kite is the species named *M. major* by Mr. Hume, which now, as conclusively shown by Mr. Brooks, should stand as *M. govinda* (Sykes).—G. F. L. M.]

24. *SYRNIUM* — ?*

Since I left Gilgit Dr. Scully writes that he has secured a *Syrnium* which he believes to be new. As soon as he is able to describe it he will do so.

25. *ASIO OTUS* (Linn.).

A summer visitor. Appears a little after the middle of March, and is tolerably common.

Dimensions of a female—length 14·5 inches, wing 12, tail 6·3, tarsus 1·8. Irides orange. Weight 8·75 oz.

26. *ASIO ACCIPITRINUS* (Pall.).

A summer visitor; appears in the middle of April. These have more and purer white on the outer margins of the wing-coverts, and the general tone of the plumage is paler, than is usual in specimens obtained further to the east. A male shot on the 5th May had the testes slightly developed. Length 14·5 inches, expanse 41, wing 12·5, tail 6, tarsus 1·7. Weight 5·25 oz.

27. *BUBO TURCOMANUS* (Eversmann).

The only specimen observed, a fine female, was brought in on the 4th January by a native, who had knocked it over with a pellet-bow.

It corresponds exactly with the original description, except in two points: there is no trace of white in the centre of the feathers of the back; and the primaries, instead of having the yellow interspaces marked with nothing more than a few minute dots of brown, have dense mottlings on the outer web, which are almost entirely wanting on the inner. The distinctive points separating this species from *B. ignavus* given by Sharpe in his Catalogue hold good, and are well exhibited in this specimen.

As compared with European and Chinese specimens of *B.*

* [Allied to *S. aluco*, and quite distinct from *S. nivicolium*, Hodgs. I hope to finish some notes about this interesting Owl shortly.—J. S.]

ignavus in the Indian Museum, the present species appears so well marked as to be worthy of more than the subspecific distinction assigned to it by Sharpe.

[It may be noted that Mr. Hume possesses a "pale" Eagle-Owl (which has been suspected to be a specimen of *B. turcomanus*) from Kulu, for which he some time ago proposed a provisional name, but added that "it is of precisely the same type of coloration as *B. maximus* (= *B. ignavus* of Europe)." Now *B. turcomanus* is not precisely of the same type of coloration as *B. ignavus*; it differs in style as well as in tone of markings. I have seen Mr. Hume's specimen; and, speaking from memory and after seeing the Gilgit specimen, I am inclined to believe that the Kulu bird is merely a male of *B. ignavus*.

Again, Mr. Blanford, in his 'Zoology of Persia,' notices a female Eagle-Owl which he identifies as *B. sibiricus* (= *B. turcomanus*), obtained near Shiraz, and adds that it is possibly the species referred to by Mr. Hume as above. The wing of the Shiraz bird is 17 inches, and the tail 9·5. These dimensions appear to be too small for any bird of either of these two types, and rather to correspond with those of a specimen of *B. uscalaphus*, also from Shiraz, which is now in the Indian Museum.

It does not seem probable that either of these birds could be rightly identified with *B. turcomanus*, to which species the Gilgit bird belongs. The dimensions of the latter (also a female) are—wing 19·1 inches, tail 12·3, expanse 70, length 27, bill from gape 2·1. Weight 4 lb. 9·25 oz.—G. F. L. M.]

Since my leaving Gilgit Dr. Scully has written to tell me that he has secured a specimen of a large Owl which appears to be too dark for *B. turcomanus*.

28. SCOPS PENNATUS (Hodgs.).

One specimen was procured in Ponyal by Dr. Scully on the 21st May. Length 7·6 inches, expanse 19, wing 6·1, tail 2·8, tarsus ·85, middle toe ·7, bill from gape ·76, bill from cere ·45, cere ·34, wings beyond tail ·35. Irides pale bright greenish yellow, bill dingy plumbeous, toes dull plumbeous, cere dull plumbeous.

Believed to be common, but, though very often heard in Gilgit, most difficult to see.

29. *SCOPS BRUCEI*, Hume.

A single specimen shot ; many others heard, but most difficult to find in the daytime. The specimen obtained corresponds exactly, to the minutest detail, with the description given by Mr. Hume ('Stray Feathers,' i. p. 9).

Another specimen, a male, shot just across the Indus at Boonji, opposite the mouth of the Gilgit river, also corresponds in all points with the description, except that the pure buff feathers forming the ruff are more broadly tipped with dark brown.

The fact of the specimens from this north-westerly locality corresponding exactly with those originally described from Ahmednuggur, places beyond a doubt the right of this species to specific separation from *S. giu*. (See observations in Sharpe's 'Catalogue of Birds in the British Museum,' vol. ii. pp. 62, 63.)

30. *HIRUNDO RUSTICA*, Linn.

Seen at intervals all through the summer. The earliest date at which any Swallow was remarked was 4th March. Specimens obtained in March, May, and June belong to typical *H. rustica*. Length 7·75 inches, wing 5, tail 4.

31. *HIRUNDO NIPALENSIS*, Hodgs.*

A few seen and two specimens shot on 16th May, among a large number of *Chelidon cashmeriensis*.

32. *COTILE RUPESTRIS* (Scop.).

[Two specimens brought ; these are the true *C. rupestris*, larger and darker than the southern *C. obsoleta*. Length 5·85 to 6·25 inches, wing 5·3 to 5, tail 2·25, tarsus ·45. Irides brown.—G. F. L. M.]

33. *CHELIDON CASHMERIENSIS*, Gould.

Appears about middle of April, and becomes very common in May.

[Only one specimen brought ; differs from *C. urbica* in

* [The species here referred to is *H. erythropygia*, Sykes.—J. S.]

having the axillaries and wing-lining brown instead of greyish white. Length 5 inches, wing 4, tail 2, tarsus 5. Irides brown.—G. F. L. M.]

34. *CYPSELUS APUS* (Linn).

First seen on 6th May. Very common during May in large flocks.

35. *CAPRIMULGUS UNWINI*, Hume.

First observed in 1879, on the 13th of May, but was common in the summer. This is the pale form of *C. europæus*, now retained by Mr. Hume as distinct.

The Gilgit specimens appear to be identical with one from Shiraz, and to be barely, if at all, separable from other specimens from Persia in the Indian Museum.

36. *MEROPS PERSICUS*, Pall.

Since my leaving Gilgit Dr. Scully writes that he secured specimens of this Bee-eater passing through late in the autumn.

37. *MEROPS APIASTER*, Linn.

One specimen was shot, on 16th May, out of a flock of about a dozen which came over but did not stay. The only occasion of any being seen.

38. *CORACIAS GARRULUS*, Linn.

A summer visitor.

Appeared both years on 28th and 29th April. Breeds at 5000 feet.

39. *PICUS HIMALAYENSIS*, Jard. & Selb.*

Tolerably common at 9000 to 10,000 feet elevation, where it breeds.

[Of the specimens brought down four correspond with the Cashmir form of this species, having the under surface very pale, almost white. In these, also, the lower tail-coverts are deeply rufous, the outer tail-feathers are barred throughout,

* [The Sikkim specimens referred to are perhaps referable to *P. majoroides*, Hodgson, as *P. himalayensis* does not occur in Sikkim.—J. S.]

the primaries have no white tips, and usually five white spots on the outer web, and the bill is large.

Seven other specimens have the underparts strongly sullied, as much so as in the darkest Sikkim specimens; the lower tail-coverts are usually barely rufescent; the outer tail-feather is barred on the outer web only at the tip; the primaries are usually black, tipped with six white spots on the outer web; and the bill is smaller.

This is a very remarkable race; but as in the small series obtained the dark tone of the underparts appears to be the only distinctive feature that is constant, sufficient ground is not afforded for specific separation.—G. F. L. M.]

40. *GEVINUS SQUAMATUS* (Vig.).

In the winter and spring is common in the main valley, but appears to ascend in the summer to higher elevations.

[Three specimens shot in December and January are identical with the Indian type; but three others obtained in March, at an elevation of 5000 feet, near Gilgit itself, are remarkable for having the neck, back, and outer margins of secondaries *grey* instead of green, while the wing-coverts are mixed grey and green. All three are females; and in two out of the three some traces of green are visible among the grey on the lower back; so that it may be only a phase of plumage of *G. squamatus*. In his 'Zoology of Persia,' Mr. Blanford notices an analogous grey form of the *Gecinus viridis* type.—G. F. L. M.]

41. *IYNX TORQUILLA*, Linn.

A summer visitant.

Specimens shot in May have the abdomen pure white, while the rufous tone of the throat is more pronounced and strongly contrasted than in the autumn specimens; the flanks and under tail-coverts are also more or less strongly tinged with rufous.

42. *CUCULUS CANORUS*, Linn.

Appears about 7th May. Common everywhere, up to 12,000 feet, in July.

43. *CUCULUS HIMALAYANUS*, Blyth.

Not very common. Appears at the same time as *C. canorus*.

44. *COCCYSTES JACOBINUS* (Bodd.).

One specimen, a straggler, a female, apparently breeding, brought in by a native who had killed it with a stone, 15th June. None others seen.

45. *CERTHIA HIMALAYANA*, Vig.

Very common below 6000 feet in winter, disappearing at end of March, when it goes up to the forests above. In winter-plumage the whole of the underparts are dark sooty, gradually changing to white as spring comes on, not, apparently, by a moult, but by change of colour. The size of bill varies greatly according to age: a young bird four months old has the bill at gape 0.62 inch, one of eight months 0.8, full-grown 1.

One specimen has the tail very closely barred, as also has one shot in Chitral.

46. *CERTHIA HODGSONI*, Brooks.

A single specimen, a male breeding, obtained at 9000 feet, by Dr. Scully, on 11th June. Tail unbarred, throat and abdomen silky white, lower mandible white, first four primaries unspotted.

Length 5.2 inch, wing 2.7, tail 2.1 (damaged), tarsus 0.6, bill from front 0.64, bill at gape 0.8.

47. *TICHODROMA MURARIA* (Linn.).

Very common indeed in November and December, but began to disappear in January. Two specimens were shot after the middle of March with the black throat fully developed. During the summer not one was seen even up to 16,000 feet elevation.

48. *SITTA LEUCOPSIS*, Gould.

A permanent resident; breeds at 10,000 feet.

49. *UPUPA EPOPS*, Linn.

A summer visitant; first seen on 6th March.

50. *LANIUS HOMEYERI* (Cabanis).

A single specimen, the only one seen, was shot on the 4th March, close to Gilgit. This specimen approaches *L. excubitor* in the rump being greyish instead of pure white, the latter being given by Severtzoff as one of the distinguishing features of *L. homeyeri* ('Stray Feathers,' iii. p. 430); but it has the inner web of the secondaries broadly margined with white, while the lores are white with black shafts instead of white.

[From *L. lahtora* it differs in the entire absence of the black frontal band, not only the forehead but also the lores, as mentioned above, being pure white.—G. F. L. M.]

51. *LANIUS ERYTHRONOTUS* (Vig.).

A summer visitor; appears about 19th April.

Jerdon's description of the colouring of the wing is incomplete: the secondaries are narrowly edged with buff on the outer web, the tertiaries broadly edged with buff and rufous on outer web and tip; upper wing-coverts black, narrowly tipped rufous, with a rufous patch and creamy white edging at the shoulder.

52. *LANIUS CRISTATUS*, Linn.*

A number of immature specimens appeared at the end of August and beginning of September for a few days; they were not observed at any other time.

53. *PERICROCOTUS BREVIROSTRIS* (Vig.).

Since my leaving Gilgit Dr. Scully writes that he saw several flocks of this Minivet in Gilgit about the beginning of winter, but all the specimens secured by him were in yellow plumage.

54. *BUCHANGA LONGICAUDATA* (Hay).

A single specimen was procured by Dr. Scully in August. Probably a straggler from Darel.

55. *MUSCIPETA PARADISI* (Linn.).

A single specimen, a young female, was brought in by a

* [The Shrike here referred to is *L. isabellinus* (Hempr. & Ehr.).—J. S.]

native, who had killed it with a pellet-bow. None were seen at any other time.

56. *HEMICHELIDON SIBIRICA* (Gmel.).

Appears about 16th May, and is very common all through the summer.

57. *BUTALIS GRISOLA* (Linn.).

Common in summer.

58. *CYORNIS RUFICAUDA* (Sw.).

Common in May, June, and July, at 9000 and 10,000 feet.

59. *TROGLODYTES NEGLECTUS*, Brooks.

Very common in winter, keeping generally to the sides of watercourses. In summer it goes up to the higher elevations, where I have seen it at about 10,000 feet.

60. *MYIOPHONEUS TEMMINCKI* (Vig.).

Common all the year round. Breeds in the end of May, at about 8000 feet; in winter comes down to 5000 feet.

61. *HYDROBATA ASIATICA* (Sw.).

Very common. Appears to breed early in March, as full-fledged young were about in the middle of April.

All the specimens show a narrow circle of white feathers round the eye; and many of them have pale greyish-white margins to the secondaries and wing-coverts, and the under tail-coverts tipped with white. The pale margins are probably remains of the immature plumage (which is blackish grey, each feather more or less margined with white); but the white circle round the eye appears to be a permanent feature*.

62. *HYDROBATA CASHMIRIENSIS* (Gould).

Since I left Gilgit, Dr. Scully writes that he found the Cashmere Water-Ouzel in the upper part of the Kergah valley, at the head of which is a pass leading to Darel, but that it appears to be rare.

* [This has also been noted in birds obtained as far east as Shillong. Cf. Godwin-Austen, J. A. S. B. 1876, part ii. p. 203.—J. S.]

63. PETROCOSSYPHUS CYANUS (Linn.).

Appears about 22nd April, and is common all through the summer at about 7000 feet.

64. OREOCETES CINCLORHYNCHUS (Vig.).

Since my leaving Gilgit, Dr. Scully writes that he procured a single immature specimen in Gilgit late in the autumn; probably a straggler from Darel.

65. MONTICOLA SAXATILIS (Linn.).

A number in immature plumage appeared each year in autumn.

Two young males, in plumage corresponding to that described by Dresser in the 'Birds of Europe,' were obtained on the 21st August and 6th September.

Length 7.6 inches and 7.75, wing 4.45 and 4.65, tail 2.5 and 2.3, tarsus 1.1 and 1.12, irides red-brown. No adult birds of this species were observed.

66. TURDUS RUFICOLLIS, Pall.

One specimen secured in January, the only one seen.

[The throat and breast are a deep vandyke-brown, with a ferruginous gloss and narrow ferruginous borders to the tips of the feathers.

The uniform dark throat and the pure rufous of the tail distinguish this species from *T. atrogularis*.—G. F. L. M.]

67. TURDUS ATROGULARIS, Temm.

Not uncommon in the winter, but not a summer resident. When the black plumage of the throat is fully assumed, the rusty tint of the axillaries and under wing-coverts disappears and is replaced by earth-brown uniform with the flanks. Though I have not remarked it in summer, it probably does not leave the district, but keeps to the higher elevations.

68. TURDUS VISCIVORUS, Linn.

Tolerably common in Gilgit during the severe winter of 1877-78, but seldom comes so low down, keeping generally to the higher valleys, where I found it in July at 10,000 feet.

69. TROCHALOPTERON SIMILE, Hume.

Seldom seen in Gilgit, but appears to be common higher

up the main valley. A pair were shot in Gilgit in the severe winter of 1877-78.

70. *TROCHALOPTERON LINEATUM* (Vig.).

Common at all times. In summer goes up to about 9000 feet.

71. *ORIOLOUS KUNDUO*, Sykes.

A summer visitant, and common. Appears about 1st May. Nest with three eggs hard-set, taken 8th June; several other nests taken later on.

72. *PRATINCOLA INDICA*, Blyth.

A summer visitor, but breeds higher up than Gilgit, where it is only common in spring and autumn.

[Herren Cabanis and Severtzoff pointed out (S. F. iii. 429) the distinction between this species and *P. rubicola*, in that "*P. rubicola* has always blackish markings along the feather-shafts of the white rump, *P. indica* never." Subsequently Mr. Hume improved on this definition by stating that "the *upper tail-coverts* and lower part of the rump in *indica* are never striated."

According to Mr. Hume's definition, two of the Stonechats obtained would be *P. rubicola*, but according to Herr Severtzoff only one; for one has the rump and upper tail-coverts distinctly striated, the other has the upper tail-coverts striated but no trace of dark centrings on the rump*.

The two birds belong to the same species; and Mr. Hume's diagnosis appears to be the more strictly accurate of the two; but as both the specimens are females, and as no male approaching the *P. rubicola* type was found among the numerous specimens preserved, I hesitate, on the strength of these two, to include *P. rubicola* among the birds of Gilgit.

All the males show a small amount of white at the base of the tail, about a quarter of an inch in some; but none have white on the outer tail-feathers as in *P. hemprichi*.

They are distinguished from *P. macrorhyncha* by having

* [A similar coloration has been noticed in some Chats procured in Nepal (S. F. 1879, p. 301).—J.S.]

the white patch formed by the upper tertials and tertiary coverts next the body, and from *P. rubetroides* by having the axillaries black and not white.—G. F. L. M.]

73. PRATINCOLA ROBUSTA, Tristram.

[Out of twenty specimens brought down, five apparently belong to the type separated as *P. robusta* by Canon Tristram. Mr. Hume points out (S. F. v. 243) that no constant specific difference has as yet been shown between this form and the smaller *P. indica*, and retains them both under one name.

After looking into this question with Mr. Brooks, and comparing a number of specimens, we concluded that *P. robusta* is a good species. It is not only a larger but a slenderer bird, with a tail much longer in proportion to its length of wing than *P. indica*. In specimens of *P. indica* and *P. robusta*, each with the wing 3 inches in length, the tail of the latter exceeds the tail of the former by a full quarter of an inch. The females also are more rufous altogether; and the males, in breeding-plumage, are less black above on the back.—G. F. L. M.]

74. SAXICOLA OPISTHOLEUCA, Strickl.

Never very common; appears about 1st May. I shot one in December; but this was in immature plumage, and its appearance was quite accidental, I fancy. I never saw another in winter. Two of the specimens have a greyish tinge on the head and nape, forming a distinct cap, which appears to be a mark of nonage, as a young bird has the whole upper plumage suffused with this colour; in a still younger bird, the back and breast are rufescent-buff, edged with brown, the wings brown, each feather edged with fulvous, and the tail as in the adult.

The young appear to differ widely from those of *S. leucura* as figured by Dresser in the 'Birds of Europe.'

The adult female is similar to the male, except that the whole of the upper plumage is less black and presents a rusty appearance. The head also has a faint cap of dark brown extending to the neck, as in the young males; and the chin is light brown instead of black.

75. *SAXICOLA PICATA*, Blyth.

This was the commonest Stonechat in Gilgit, where it breeds. A very large series was collected in every month from March to September.

Mr. Hume has for some years past asserted that *S. capistrata* of Gould is merely the young male of *S. picata*: the question is one extremely difficult to decide finally; but the series now got together for examination bears out, to a very great extent, Mr. Hume's conclusion. The only point suggestive of a doubt of the identity of the two supposed species is, that throughout the summer numerous specimens were obtained in every month with pure black heads, showing no trace whatever of white.

Of eleven specimens collected in March, eight have pure black heads, one has a trace of a pale supercilium, one has the same more pronounced and also a whitish forehead, and one has the sides of the occiput and nape almost pure white, while the whole of the top of the head is more or less streaked with dingy white.

Of seven obtained in April, three have pure black heads, the wings being quite brown in one specimen and nearly black in the other two; two have a faint trace of white behind the eye; and two have the forehead paler, with a well-marked whitish supercilium and frontal band.

Of five specimens obtained in May two have pure black heads, the wings in one being quite brown; two have the sides of the occiput and the head streaked, as in the March specimen; and the fifth has the top of the head slaty white, pure white at the sides of the occiput, and is similar to *S. capistrata* (Gould), except that the white does not extend on to the mantle.

Of three specimens obtained in June, each has the head pure black.

Of ten birds obtained in July, five are young birds of the year; the five old birds are moulting and in bad plumage: four of the latter appear to have the head pure black; and one shows a greyish tinge on the cap.

Of three birds obtained in August, two have the heads black, and one has a greyish tinge on the cap.

Of seven obtained in September, one has only the faintest trace of white behind the eyes, one has the pale supercilium and frontal band, five have an indistinct greyish tone over the whole cap; but none show the white head, and one, showing no trace of white on the head, has the wings broadly margined with rufous.

Again, the adult specimens above referred to show many shades of brown on the wings, from light hair-brown to black; but this feature does not appear to be distinctive of either age or season.

In the young bird of the year the tertiaries and scapularies are narrowly margined with rufous-brown. In a September bird, apparently of the earliest brood, which has assumed the black on the upper parts, the tertiaries and scapularies are even more broadly edged with rufous than in the younger birds. The uniform brown wing, after losing the rufous margins, appears in birds of every season, and is not in any way connected with the assumption of the white on the head; it is seen equally in the most white-headed birds and in those with pure black heads. The rufous tone of the under tail-coverts appears most pronounced in spring and autumn; but even this does not hold good throughout the series.

Dr. Scully and I have closely examined a very large number of specimens; and the only way in which we can account for the occasional appearance of the white on the head is, that it is assumed in the spring of the first year only. The young bird has the head uniform dull brown, rather darker than in the adult female, with narrowish rufous edgings to the tertiaries and scapularies; and towards the next spring a white cap is gradually assumed, which is perfected in the beginning of May. Directly after breeding, the white of the head appears to give place to dark grey, hardly distinguishable from the black of the back; and in the succeeding autumn-moult the bird assumes the fully adult plumage with the glossy black head, which is not afterwards lost.

It may be that the species with the pure black head is

distinct from that which assumes the grey cap; but we are unable to separate them into two on this or any other hypothesis.

The sixty-odd specimens now examined show at least twenty phases or gradations of plumage; and though we cannot separate them into two distinct species, neither can we show conclusively that the gradations, according to age or season, are applicable on the assumption that there is only one species.

In no case does the white in these birds extend onto the mantle, as it does in *S. morio* at all ages.

S. picata also has the bill stronger and deeper, and the tarsus and toes stronger and coarser, than in *S. morio*. Some specimens measure as much as 6·8 inches in length, while only a single specimen of *S. morio* measures 6·4, the next longest being 6·25. No other measurements show permanent distinctions; but, on the whole, *S. morio* has somewhat the shorter tarsus.

Two dissected females, shot March 31 and April 5, have black throats and breasts, albescent chins, and dark brown backs; two males, shot March 25 and April 1, seem to belong to the same type, having brown on the back.

In the middle of June a nest was found deep in the crevice of a stone wall in a ruined fort. After two eggs had been laid the bird was apparently killed by some animal. One egg was found broken, and the ground strewn with feathers of the hen bird. The egg is pale blue, thinly spotted all over with rusty red, more thickly (but not very thickly) at the larger end.

76. SAXICOLA ALBONIGRA, Hume.

This species is never very common, but is the only *Saxicola* which remains in winter. I have procured specimens both in January and June. It may always be distinguished from *S. picata* by the size of its bill, which is always over half an inch in length.

77. SAXICOLA MORIO, Hempr. & Ehr..

This species is apparently only to be distinguished from *S.*

leucomela (under which name it is described by Jerdon) by the inner web of the quills being black instead of white. (See Blanford and Dresser's Monograph, P. Z. S. 1874, p. 225.)

From *S. picata* it may be distinguished by its more delicate legs, feet, and bill: it shows white on the head at all seasons; and the white extends onto the mantle. In no specimen of *S. morio* obtained is there any trace of rufous on the under tail-coverts. One specimen differs in this point only from Gould's plate of *S. capistrata*; and the specimen mentioned in the monograph as from Lahore, with rufous on the under tail-coverts, would appear to be a stage of the form described as *S. capistrata* (see *S. picata*): the white is very silky, and the black more intense and shining than in *S. picata*, especially on the throat. On the whole it is a shorter and more slender bird than *S. picata*, but has an equally long wing. Messrs. Dresser and Blanford are wrong in supposing that the female is like the male: it closely resembles the female of *S. picata* as figured in Gould's 'Birds of Asia' in the plate of *Dromolea picata*; but the bill and feet are similarly weaker as in the males, the upper parts are more rufous-isabelline instead of hair-brown, and there is a well-marked, though narrow, pale supercilium and frontal band; the whole head is paler and more rufous than the back, whereas in *S. picata* the head and back are alike.

The younger male closely resembles the female, except in having the fore neck and upper part of the breast black mottled with rufous.

S. morio was first seen on April 22; in May and June it was tolerably common, but never seen in great numbers.

78. SAXICOLA VITTATA, Hempr. & Ehr.

Two specimens referred to this species were procured by Dr. Scully. The first, a male shot on June 11, agrees well with Mr. Blanford's description of the type, but differs slightly in size. Length 6.1 inches, expanse 10.5, wing 3.6, tail 2.4, tarsus 0.9, bill from gape 0.8, bill from front 0.5. The crown and nape are slightly sullied with brown, as in some specimens of *S. morio*. Chin, throat, and breast pure white.

The female is much paler than the female of *S. morio*, but has the chin and throat dirty white, and has no supercilium. Length 5·8 inches, expanse 10·6, wing 3·45, tail 2·6, tarsus 0·9, bill from gape 0·8, bill from front 0·47.

79. *SAXICOLA ISABELLINA*, Rüpp.

None were observed in the first year. In the second year several specimens were procured. They appeared about March 6, and were tolerably common till the end of the month. One specimen was secured on April 21.

This is *not Saxicola ænanthe* (No. 491 of Jerdon) as identified by Messrs. Hume, Dresser, and Blanford. Jerdon's description is correctly applicable to the true *S. ænanthe*.

The female has the plumage of a paler tone throughout than the male.

80. *SAXICOLA ÆNANTHE* (Linn.).

Two specimens were obtained, and about half a dozen others observed, during some heavy weather in March, but never seen at any other time. Both are males, and are assuming the summer plumage, as shown in the plate in Dresser's 'Birds of Europe.'

Mr. Hume has identified *Saxicola ænanthe*, as described by Jerdon, with *S. isabellina*; and in this he has been followed by Messrs. Blanford and Dresser in their exhaustive monograph of the genus. But Jerdon's description and the detailed description given in that monograph of *S. ænanthe* correspond exactly both with each other and with the specimens now brought from Gilgit. (In the fifth line of the description "outer" is probably a misprint for "other.") And as Jerdon, who very accurately describes the species, states that he got a specimen near Mhow, there is no ground for excluding *S. ænanthe* from the list of Indian birds.

It may be distinguished from *S. isabellina* by the wings and tip of tail being black, not brown, the dark tippings of the side-feathers of the tail being much narrower, and by the conspicuous broad black stripe on the side of the head from the lores through the eye to the ear-coverts, and in summer by the blue grey tone of the back.

81. *SAXICOLA HENDERSONI*, Hume*.

This species was not noticed the first year; but in the second year a number appeared in September, chiefly young birds, and a few adults among them. Messrs. Blanford and Dresser, in their monograph of the Saxicolinæ, and the latter also in the 'Birds of Europe,' suppress this species, and place the name as a synonym of *S. melanoleuca*. The reasons for this are not given; and the coloration of the base of the feathers on the back seems to be utterly incompatible with the assumption of a white back in summer; so that this decision could not be accepted, even in the absence of specimens in full breeding-plumage. But Mr. Hume has recently pointed out that three males obtained by Dr. Stoliczka, in the second Yarkund expedition, are in full breeding-plumage, and have the back, as might have been anticipated, black.

It is worthy of note that the nearly allied *S. deserti*, which is common in the Indus valley above 7000 feet, is not found in Gilgit.

There is nothing to add to Mr. Hume's careful and detailed description of his species *S. hendersoni*.

82. *RUTICILLA RUFIVENTRIS* (Vieill.).

With reference to the distinctive difference pointed out by Mr. Blanford in 'Eastern Persia,' vol. ii. p. 165, all specimens procured in Gilgit have rufous under wing-coverts, thereby distinguishing them from the *R. erythroprocta* type, which has the under wing-coverts black.

Eleven males agree fairly with stage IV. in 'Stray Feathers,' vol. v. p. 36, except that the back is only partially black, and the greyish white band on the forehead is only visible in the May specimens.

The fact of males breeding in female plumage has been before remarked; but it seems far commoner than has been supposed. Like many other birds, this species probably does not get its fully adult plumage till after the first breeding-season.

* [This is the same as *S. morio*, No. 77 of this list. Mr. Hume's original description and figure of *S. hendersoni* admirably represent the winter plumage of *S. morio* (Hempr. & Ehr.).—J. S.]

In males of the first year in autumn the black of the back is concealed by ashy brown, instead of grey as in more mature birds.

These birds go beyond Gilgit to breed as a rule; one female was shot off the nest with young at 10,000 feet elevation in the Gilgit district.

83. *RUTICILLA HODGSONI*, Moore*.

A single specimen of a female procured in February. Its measurements correspond best with the measurements given by Jerdon for *R. hodgsoni*. In other respects the plumage is most like the description of *R. cæruleocephala* given by Hume in 'Lahore to Yarkund;' but the whole tail, except the two outer feathers, is rufous, and there are faint rufous tints on the breast.

84. *RUTICILLA ERYTHRONOTA* (Eversmann).

Two male specimens of this handsome Redstart were procured in December and January. It appeared to be common in the upper part of the Chitral valley in November, when I procured several specimens of both sexes. As noted by Mr. Blanford, the amount of rufous on the back and breast differs in different specimens; but a specimen shot in December is almost entirely rufous on the back, showing very little grey. The feathers of the back and breast have margins of grey above and isabelline below, which are decomposed; and the breadths of these margins seem to differ in different specimens, causing a greater or less amount of rufous to be visible; the December bird is also small in all its measurements, with a bill of only 0.32 inch in front.

The white speculum on the primary-coverts is very prominent in the December and in one November specimen; in the other November and in the January specimen it is inconspicuous, almost wanting in the latter.

The speculum, where prominent, agrees with Eversmann's

* [This is hardly likely to be *R. hodgsoni*, as that species has not, I believe, been obtained west of Nepal, and the large tract of country between Nepal and Kashmir has been well explored. It might possibly be *R. mesoleuca*.—J. S.]

description. Mr. Blanford's description omits all notice of it (probably accidentally) in the Shiraz specimens; while in Mr. Moore's description of *R. rufogularis* the speculum is described as formed by the *basal* portion of the primaries being white. In other respects the three descriptions coincide well with each other and with the Gilgit and Chitral specimens.

85. *RUTICILLA ERYTHROGASTRA* (Güld.).

Was extremely common during the severe winter of 1877-78 down to an elevation of 5000 feet, but in ordinary years does not come much below 6000 feet. The white of the head and back of neck in the male appears to be a sign of maturity. One specimen, of which the sex is doubtful, has the dull plumage of the female, but has more rufous on the underparts, and is probably a young male of the year. Of the males in adult plumage some specimens have the white of the head and back of the neck thickly dashed with dark slaty grey, being, perhaps, males of the second year. Those in the most perfect plumage have the head and back of neck dull white, extending rather further down the back.

The female is slightly smaller than the male, the wing measuring from $3\frac{3}{4}$ to 4 inches. With the exception of the wing-feathers being margined with silvery grey instead of rufous, there seems to be no difference except that of size between the females of *R. erythrogastra* and *R. rufiventris*.

This Redstart is said to breed higher up the valley, in Yassin, at an elevation of 8000 feet.

86. *RUTICILLA FRONTALIS* (Vig.).

A summer visitor, appears in April and remains up in high ground about 9000 to 10,000 feet, being only once seen in Gilgit during some heavy weather in April.

The male in breeding-plumage loses the terminal brown edgings to the feathers of the head, back, throat, and breast, these parts becoming uniform dusky cyaneous, while on the feathers of the throat and breast a lazuline sheen appears.

In a young bird of the year the entire head, back, and breast are deep brown, each feather centred with rufous fawn-colour, more largely on the breast than on the back; the

wings are nearly black, the secondaries narrowly, and the tertiaries and greater coverts broadly edged with bright rufous; abdomen rufescent fawn-colour; upper and lower tail-coverts and tail as in the female.

87. *ADELURA CÆRULEOCEPHALA* (Vig.).

A summer visitor. It appears in April, and breeds at about 10,000 feet.

88. *CHIMARRHORNIS LEUCOCEPHALA* (Vig.).

A resident, but never very common. A few pairs to be seen generally at about 10,000 and 11,000 feet in summer; it comes down to 5000 feet in winter.

89. *NEMURA CYANURA* (Pall.)*.

Obtained in Gilgit in May and in the Nulter valley in August, at 11,000 feet. In August the young were fully fledged. The plumage before the first moult is bright rufous-brown above, paler below, each feather margined with dark brown; wings and tail hair-brown; middle of abdomen pure white.

90. *CALLIOPE PECTORALIS* (Gould).

First seen on May 1, by which time it was in full breeding-plumage, birds shot in the beginning of June being not nearly so brilliant; it breeds at 10,000 feet.

The measurements and description given by Jerdon do not entirely correspond with the specimens secured; the wing in some is as much as 3.25 inches in length. In the breeding male the top of the head and nape are brown, forming a defined cap in contrast with the ashy grey of the back and sides of the neck, and there is no trace of the white moustachial spot; the female has no white on the tail at all.

The young males in July, in immature plumage, show no throat-spot, but can be distinguished by the white at the base of the tail.

Young birds and nestlings are spotted, and approximate to those of *Adelura cæruleocephala*. Evidently two broods are produced in the year.

* [This is the Himalayan *N. rufilata*, distinct from *N. cyanura* (Pall.). —J.S.]

91. *CYANECULA SUECICA* (Linn.).

The earliest migrant. It appears from the south about February 7, is very common all March, and disappears in April. It breeds somewhere higher up, but not far off, and reappears on its way south on August 21.

In all the March specimens the blue throat and rufous patch are fully developed. One of these is remarkable for having the lower rufous band below the black-and-white gorget an inch deep; in all the others, obtained earlier and later, this band is about a quarter of an inch deep.

All the September specimens are in the "young" stage, as described by Jerdon, having white throats with blue moustachial streaks.

92. *CYANECULA LEUCOCYANEA* (Brehm).

A single specimen was procured by Dr. Scully on April 15 with the white throat-spot. A faint rufous tinge appears at the bases of the satin-white feathers, looking very much as if there were a change of colour in the feather. Length 5·7 inches, expanse 8·75, wing 2·75, tail 2·15, tarsus 1·1, bill from gape 0·8, from front 0·45.

93. *ACROCEPHALUS DUMETORUM* (Blyth).

Common in the summer.

94. *DUMETICOLA MAJOR*, Brooks.

Common in the Nulter valley in June, July, and August, where it breeds at an elevation of from 8000 to 10,000 feet.

Young birds shot in August are much the same in plumage as the old birds; but they have a strong tinge of green on the under surface, the breast-spots are indistinct and cloudy, lower mandible pale yellowish, upper brown, feet pale.

95. *HYPOLAIS CALIGATA* (Licht.).

A few specimens procured in August and September at 5000 to 7500 feet.

96. *PHYLLOSCOPUS TRISTIS* (Blyth).

A summer visitor. Breeds at about 8000 feet. Very common.

97. *PHYLLOSCOPUS LUGUBRIS* (Blyth).

A single specimen shot at 10,000 feet at beginning of June.

98. *PHYLLOSCOPUS VIRIDANUS* (Blyth).

Common from the beginning of June till the middle of September.

99. *PHYLLOSCOPUS TYTLERI*, Brooks.

One specimen (♀) shot on August 9, in the Nulter valley at 10,000 feet. Length 4·4 inches, wing 2·36, tail 1·55, tarsus 0·75; legs greenish horny; soles of feet yellow.

100. *PHYLLOSCOPUS AFFINIS* (Tick.).

Three specimens obtained at 5000 feet in May and June, and several others at 10,000 to 10,500 feet in July and August.

101. *PHYLLOSCOPUS INDICUS* (Jerd.).

Very common in summer.

102. *REGULOIDES OCCIPITALIS* (Jerd.).

A summer visitor. Common in June, July, and August at 9000 feet.

According to Jerdon this species is distinguishable from *R. trochiloides* by its size; but according to Seebohm the measurements of both are alike, and the only difference is that *R. occipitalis* has one bar, and *R. trochiloides* two, on the wings; but a specimen sent me by Mr. Brooks as *R. occipitalis* has two bars. If Seebohm is right, then two of my specimens would appear to be *R. flavo-olivaceus* (Hume, 'Str. Feathers,' vol. v. p.504); but the barring of the wing appears to depend on age and season, and I believe them all to be *R. occipitalis*.

103. *REGULOIDES HUMEI*, Brooks.

A summer visitor. The young of this and *R. subviridis* are most difficult to distinguish. Both breed in the Nulter valley at about 9000 feet.

104. *REGULOIDES SUBVIRIDIS*, Brooks.

Common at 5000 feet in March, April, May, and beginning of June; breeds in the Nulter valley in July at 10,000 feet. Young birds shot in August fully fledged.

105. *REGULUS CRISTATUS* (Koch).

One specimen shot at 11,000 feet in July.

106. *SYLVIA AFFINIS*, Blyth.

A summer visitant. Arrives about May 1, and leaves in October.

107. *SYLVIA ALTHÆA*, Hume.

The specimen which I have referred to this species was procured in May.

108. *SYLVIA CINEREA* (Lath.).

A few specimens were secured each year, in August and September.

109. *HENICURUS SCOULERI* (Vig.).

Tolerably common in all the small streams. In addition to Jerdon's description may be noted that the primaries, except the first and second, and all the secondaries, have part of the outer edge white. There is also a conspicuous dark band across the rump between the white of the lower part of the back and the upper tail-coverts. The flanks are smeared with sooty.

110. *MOTACILLA HODGSONI*, Gray.

Extremely rare; only a single specimen obtained, in full breeding-plumage, in June, at an elevation of 8000 feet; two specimens, obtained in April, were assuming the breeding-plumage. In September it was tolerably common higher up the Indus towards Iskardo, and was then rapidly assuming the winter plumage.

Dr. Scully's diagnosis of the grey Wagtails in 'Stray Feathers,' vol. viii. p. 312, is extremely clear and accurate, so far as these specimens show, though there is some variation in the size of the bill.

M. hodgsoni may be best described as the black-backed representative of *M. personata*; while *M. leucopsis* (= *M. luzoniensis*) is the black-backed representative of *M. alba*. The distinction between *M. hodgsoni* and *M. leucopsis* is now probably questioned by no one, though it was formerly discussed in the earlier numbers of 'Stray Feathers.'

111. MOTACILLA PERSONATA, Gould.

Common all the year round. In summer it goes up to about 9000 feet or more.

Severe weather in winter, spring, and autumn always drives a number down to the low ground. They are as good as a barometer, always appearing a day before the bad weather, and disappearing again before it entirely clears. The specimens preserved were obtained in February, March, August, September, and October; and all show the grey back, while during the summer months, though unfortunately no grey-backed specimens were shot, they were constantly observed and were extremely common. This point establishes the specific distinctness of *M. personata* from *M. hodgsoni*.

112. MOTACILLA ALBA, Linn.

Not a constant resident.

In spring it was first observed on 24th April, when a large number in full breeding-plumage suddenly appeared during heavy weather. In the summer none were seen; but in September it was again extremely common for a short time in Gilgit, and also up the Indus towards Iskardo. Young birds secured at this time show the yellow tinge over the white on the face and neck.

113. CALOBATES MELANOPE (Pallas).

Common in summer, but rarely seen in winter. The female in breeding-plumage has, instead of the black throat which is assumed by the male at that season, an interrupted streak of dusky spots at each side from the base of the lower mandible.

The young bird is similar to the female in winter plumage, but duller in tone throughout.

114. BUDYTES CINEREICAPILLUS (Savi).

A single specimen obtained on the 10th May. Field-Wagtails, except of the yellow-headed type, were only common for a few days in spring and autumn; a few were occasionally seen during winter.

[Mr. Brooks has given an excellent diagnosis of the characters by which the males of several of the species can be

distinguished in adult summer plumage; the following key extends the diagnosis to include all those recorded from India or neighbouring countries :—

- A. With the entire head yellow.
 - 1. Entire back black *B. calcaratus.*
 - 2. Back grey *B. citreolus.*
- B. With the top of the head pure black; supercilium very narrow or wanting.
 - 3. *B. melanocephalus.*
- C. With the crown yellowish green; supercilium yellow, broad.
 - 4. *B. rayi.*
- D. With the crown grey.
 - 5. Crown pure light grey; supercilium white, broad; cheeks pale grey and pure white *B. dubius.*
 - 6. Crown deeper grey; supercilium white, broad; cheeks dark grey, with a few white streaks *B. flavus.*
 - 7. Crown dark grey; supercilium white, narrow or wanting; cheeks dark slate, almost black *B. cinereicapillus.*

—G. F. L. M.]

115. BUDYTES MELANOCEPHALUS (Licht.).

A single female shot on the 10th April in immature plumage.

116. BUDYTES CALCARATUS (Hodgson).

Out of ten specimens obtained in May and June, nine are males; and the only female has the back strongly tinged with green, and a good deal of dusky green is mixed with the yellow on the nape. The young of this species appear to be undistinguishable from those of *B. citreolus*, except perhaps by a generally rather darker hue. A single specimen was secured in March; but no others were noticed till May, after which it was common till October.

117. BUDYTES CITREOLUS (Pallas).

Of this species males and females were obtained in about equal proportions. A female shot early in March has the black cowl well developed, and the back from the shoulders to the middle of the tail-coverts pure grey with a very slight wash of green.

Another, shot at the end of April, is similar, but the black cowl is much less prominent, though the whole head and nape are pure unmixed yellow.

In a third, shot at the end of May, the back is pure grey, the black cowl entirely absent, and the yellow on the nape is suffused with dusky; this is apparently a breeding but not fully adult bird. The bird figured by Gould (B. Asia, pt. xvii.) as female *B. citreoloides* in full plumage is *B. citreolus* in winter or immature plumage.

In Gilgit *B. citreolus* appears in March, and is common till May and again in October; it ascends to higher elevations to breed. The breeding-plumage is identical in the two sexes.

118. ANTHUS TRIVIALIS (Linn.).

Was very common throughout the summer, and breeds in July at the higher elevations.

[The series brought down contains many examples of the European type as described by Dresser in the 'Birds of Europe,' and also many of the Indian type, "purer and greener in colour, with the spots on the breast boldly defined;" but Mr. Dresser's conclusion that they are all referable to one and the same species appears to be quite correct.

During the summer months, while breeding, the plumage loses much of its brilliancy, the general tone becomes very brown, and the striations on the back are ill-defined; the brighter plumage is reassumed in September.—G. F. L. M.]

119. ANTHUS CAMPESTRIS (Linn.).

A single specimen shot on 8th March; no others seen. Evidently a straggler.

120. ANTHUS ROSACEUS, Hodgs.

A number were observed and ten obtained at the end of April and throughout May; but after the end of May none were seen.

121. ANTHUS CERVINUS (Pall.).

Two specimens shot, in May and December.

122. ANTHUS BLAKISTONI, Swinhoe.

Very common all through the winter. About 20th Feb-

ruary the males begin to assume the rufous tinge of under-plumage and the grey on head and neck. The females do not commence to assume their breeding-plumage till the middle of March. By the end of March the breeding-plumage is fully assumed.

I had entered this bird as *A. spinoletta* ; but Mr. Brooks, on seeing some specimens, pronounced them to belong to this species, and distinct from true European specimens of *A. spinoletta*, which has a richer brown on the back and is less striated, with the breast-spots large and cloudy.

123. CEPHALOPYRUS FLAMMICEPS (Burt.).

Three shot, on 1st September at 9000 feet.

124. LEPTOPECILE SOPHLE, Sev.

A winter visitant, but seldom comes below 6000 feet except in very severe weather.

In 1874, after returning from Yarkund with some specimens of this bird, I found a young one labelled as having been shot at Leh, but not identified at the time. On showing my collection to Mr. Hume, he suggested that the label must have been attached by mistake, and that the specimen must have been procured with the others north of the Karakorum. After procuring the bird at Gilgit, I doubt not that my label was correct, and that specimens are to be procured at Leh ; but the bird is at all times so difficult to see and to shoot, that it is not surprising that it has hitherto escaped notice. Dr. Scully also informed me that he found it in the Nobra valley in Ladak.

The plumage is very thick and soft ; and the basal part of the feathers and down on the lower surface is deep black, concealed by the colour of the tips.

The male only has been figured by Gould ; but the letter-press contains an accurate description of the female by Severtzoff.

125. ÆGITHALISCUS LEUCOGENYS, Moore.

This species was described by Moore in the P. Z. S. as long ago as 1854, from specimens in the India Museum, labelled from Afghanistan ; the description is accompanied by a short

extract from Griffith's MS. notes; but subsequently to this the bird does not appear to have been obtained, nor is its correct habitat defined.

A number of specimens were obtained in the main valley about fifteen miles above Gilgit, among thick bush and tree-jungle, about the middle of May. In these the chin and throat are of a deep blackish maroon, rather than jet-black (as described by Moore); and towards the breast the lower margin of the dark patch is narrowly but distinctly fringed with chestnut. In other respects they agree exactly with the original description.

The dimensions, taken in the flesh, are as follows:—

Adults—length 4·75 to 4·8 inches, wing 2·2 to 2·23, tail 2·2 to 2·25, tarsus 0·63, bill at front 0·25.

Young—length 4·3 inches, wing 1·95, tail 1·8, tarsus 0·55.

In the young birds the dark throat-patch is only partially developed and is blackish mixed with white.

126. *PARUS MELANOLOPHUS*, Vig.

A constant resident, but seldom comes below 7000 feet, even in winter.

A number of specimens were obtained—all males, strange to say; the buff tint of the spots on the wing-coverts appears to be a mark of nonage, the pure white being obtained when the birds are fully adult.

In many specimens the white tips to the secondaries are absent, and in others only faintly marked; their full development appears to take place in the adult bird.

The axillaries and under wing-coverts are rufous, as well as the flanks. The plate in Gould's handsome work 'The Birds of Asia' represents this species very accurately.

127. *PARUS RUFONUCHALIS*, Blyth.

This species is distinguishable from *P. beavani* by its larger bill and by the black extending further down the breast; the bill in *P. beavani* is similar to that of *P. melanolophus*.

It is a permanent resident at about 9000 feet, but seldom descends even in the depth of winter to the main valley. It is very common where found.

Compared with Blyth's type (which comes from Simla), the nuchal spot is less rufous, in some specimens being almost entirely white.

128. *PARUS NIPALENSIS*, Hodgs.*

All the specimens procured are paler on the nape; in some the edging to the black is albescent, but not any thing like a semicollar. Specimens from Murree cannot be separated from Gilgit birds.

Many show a vinaceous tinge on the white of the abdomen. Nestlings and young birds are strongly tinged with yellowish green.

The birds from Gilgit are similar to the type found in the Himalayas as far east as Nepal, at all events; but they are considerably larger than the type found in the plains, and lack the distinct white marking on the nape, whether spot or semicollar.

Measurements given in 'Stray Feathers,' vol. ii. p. 417, by Ball, from Chota Nagpore, are—wing 2·4 inches in one, 2·5 in another. Sex not mentioned.

Also 'Stray Feathers,' vol. i. p. 384, by Adam, from Sambur Lake—wing 2·6 inches. Sex not mentioned.

Jerdon gives measurements as 2·8 inches. A male from Murree measures (by my measuring) 2·9; and those procured at Gilgit measure 2·97 in the males and 2·7 in the females.

The young birds are green on the back, the undersurface pale yellow; the black markings are dull, with a brownish tinge and no gloss whatever, similar in extent to those of the adults on the upper surface, but beneath confined to a stripe from the chin towards the abdomen, not coalescing with the black on the upper surface, the sides of the face and neck being also pale yellow. In the nestling just fledged (killed in June) there is a well-defined pale yellow demicollar on the nape, beneath the black. In a rather older bird (killed in August) the back is still green, the black without gloss, and

* [Mr. Blanford has also pointed out that the birds of this species found on the Nilgiris are larger than specimens obtained in the plains (J. A. S. B. 1869, part ii. p. 181).—J.S.]

the pale demicollar less marked, and the black of nape and throat show no signs of coalescing; but the yellow tint of the undersurface is disappearing, and the wings and tail (which are fully developed) are coloured as in the adult. There is no intermediate stage represented in the collection, but as the green-backed bird is never found in winter, there can be no doubt that it is the immature phase of *P. nipalensis*, which is the commonest bird in Gilgit.

This is the only bird that does not appear to make any seasonal change in its habits in this locality.

129. *ACCENTOR NIPALENSIS*, Hodgson.

This Accentor was extremely common during the winter of 1877-78. It was generally met with in scattered flocks of fifteen or twenty, and seemed to prefer keeping to the vicinity of water. It was very bold, allowing one to come quite close, while it hopped unconcernedly about searching for worms &c. Occasional specimens seemed much lighter-coloured than the generality. All the specimens obtained were shot in December, January, and February.

The sexes are coloured alike.

130. *ACCENTOR ALTAICUS*, Brandt.

During the severe winter of 1877-78 several flocks of this Accentor appeared; but it was never very common. It was generally in compact flocks of twenty or thirty, keeping to the hill-sides, and not very easy to approach. The flight is very rapid; and, like most of the Accentors, it appears very Finch-like in its habits, approaching in this respect especially to the genus *Montifringilla*. The measurements given by Jerdon are apparently those of a female. In the adult male the wing measures $3\frac{3}{4}$ inches and the tail $2\frac{1}{2}$. Irides cherry-red. The ear-coverts are fulvous, the interscapular region and tertiaries black with broad rufous margins; lower back dingy grey. The wing-coverts are more or less tipped with white, as in *A. nipalensis*, forming two conspicuous but irregular wing-bars; the under tail-coverts are brown, broadly margined with white. Chin white, the feathers of the throat and fore neck white with black tips.

The grey of the shoulders and lower back contrasts strongly with the ferruginous tint on the upper back ; and the crown of the head is in some specimens very distinctly streaked with brown.

131. *ACCENTOR JERDONI*, Brooks.

Common in the summer at elevations of 10,000 feet and upwards, where it breeds. It was not observed in winter. This is the species figured by Gould (B. Asia, pt. vii.) as *A. strophiatius*. A young bird just able to fly, shot towards the end of July, has the upper plumage dark brown, broadly margined with ferruginous, a party-coloured wing-bar, formed by buff tips to the secondary-coverts and dark-brown tips to the primary-coverts ; the whole supercilium is buffy white ; the lower parts are fawn-colour, almost white on the throat, and strongly tinged with ferruginous on the breast ; most of the feathers dark-centred. This is a much younger stage than that described by Mr. Hume in 'Lahore to Yarkund.'

132. *ACCENTOR ATROGULARIS*, Brandt.

Tolerably common during the winter ; leaves about the 23rd March.

Agrees well with Jerdon's description of *A. huttoni*, and also with Gould's plate of *A. atrogularis*, which latter name has precedence if the two names refer, as they apparently do, to one and the same species.

133. *ACCENTOR FULVESCENS*, Severtzoff?

A species of *Accentor* was common in Gilgit during the winter, which, in the absence of the type to compare with, must stand under this name, though it neither agrees with the plate nor the description given in Gould's 'Birds of Asia,' part xxiii. (*vide* 'Stray Feathers,' vol. iii. p. 428), which Dr. Severtzoff says is his *A. fulvescens*.

Description. Sexes alike. Top of the head almost uniform dull brown ; the rest of the upper plumage grey-brown ; the feathers of the back indistinctly centred dull brown ; wings and tail dull brown, with pale edgings ; two white wing-bars, formed by tippings to the coverts ; no pale tips to the inner webs of the tail-feathers, except a faint trace on the outermost

pair ; superciliary streak, extending over the ear-coverts, pure white ; sides of the face and ear-coverts deep brown, a few of the latter tipped whitish ; under surface pale fulvous, deepest on the breast, albescent on the chin, throat, and lower centre of abdomen. Length 6·25 to 6·4 inches, wing 3 to 3·15, tail 2·5 to 2·65 ; tarsus ·75, dull red.

This bird is retained as *A. fulvescens* solely because it appears to be identical (speaking from memory) with the specimens obtained in Yarkund, which were identified by Dr. Severtzoff himself as belonging to this species ; but it certainly differs, as stated above, from both the figure and the description.

It is not the *A. montanellus* figured in Gould's 'Birds of Europe,' for that has the back reddish ash, the supercilium buff, and the flanks striped.

It is not the *A. montanellus* in Gould's 'Birds of Asia' for the same reasons, and, further, because it wants the grey patch on the side of the neck, and the white tippings to the secondaries.

It is not the *A. montanellus* figured in David and Oustalet's 'Oiseaux de la Chine ;' for that is a much darker bird, and has the buff supercilium and reddish-brown back.

It is not the *A. temminckii* of Brandt ; for that is identical with the *A. montanellus* figured in Gould's 'Birds of Europe.'

It is not the *A. montanellus* described by Dresser in the 'Birds of Europe ;' for that also has the supercilium buff and the back chestnut-red.

And if not *A. fulvescens*, Severtzoff, it is a species hitherto undescribed.

It is somewhat similar to *A. atrogularis*, which was almost equally common ; but, besides wanting the black throat, its pale and almost uniform tone of coloration, and the absence of all tinge of red on the back, markedly distinguish it from that species.

134. CORVUS CORONE, Linn.

Since my leaving Gilgit Dr. Scully writes that he has secured two undoubted specimens of this species.

135. CORVUS CORNIX, Linn.

A few specimens always to be observed in December, January, and February, mixed up with other Crows.

136. CORVUS LEVAILLANTI, Less.

There are evidently two species of Crows of this type; but the only good distinction in the dried skin seems to be the length of the tail. The short-tailed ones (*C. culminatus*) go about in flocks; the long-tailed ones (*C. levaillanti*) only in pairs, and keep to the higher elevations, only coming down in winter to the main valley. These Crows are apparently what Sharpe identifies as *Corvus culminatus* and *Corone levaillanti*, except that the dimensions of his *C. culminatus* are too small for the Gilgit bird. The distinction in comparative length of first primary holds fairly good, except in one specimen; the distinction in the lie of the rectal bristles is somewhat better, but is less decidedly marked in some specimens of *C. culminatus* than in others; but the differences in habit leave no doubt that, however difficult of definition, the species are distinct.

Out of nine specimens of *C. levaillanti* the wing ranges from 13 to 13·8 inches—except in a single specimen, unsexed, which measures 12·6. The tails measure 9 to 9·5, except in the specimen referred to above, in which it is only 8·8. In *C. culminatus* the wing ranges from 11·4 to 12·6, the tail from 7·85 to 8·75.

137. CORVUS CULMINATUS, Sykes.

See preceding remarks.

138. CORVUS UMBRINUS, Hedenb.

On one occasion, among several hundred Crows collected over a dead animal, at 12,000 feet elevation, I distinguished a pair which differed from all the others in size, colour, and voice, and which I refer to this species.

139. CORVUS FRUGILEGUS, Linn.

Very common in winter; appears in large flocks.

140. CORVUS MONEDULA, Linn.

A few always about during the time of extreme cold, gene-

rally mixed up with other Crows, but disappear in April. The specimens procured and observed show no approach to the *C. collaris* type, with the white half-collar, which is recorded from Kashmir and Afghanistan.

Since leaving Gilgit Dr. Scully writes that he has procured specimens of the *C. collaris* type, which appear distinguishable from *C. monedula*.

141. *NUCIFRAGA MULTIPUNCTATA*, Gould.

Common at all times in the forests above 8000 feet.

Of six specimens the length of wing varied from 7·75 to 8·25 inches (the smallest being a female and the largest a male), total length 14 to 15·15, tail from 5·8 to 6·5. Irides brown; legs black.

142. *PICA RUSTICA* (Scop.).

The form separated as *P. bactriana* by some authors.

Very common at all times. In winter it comes down to 5000 feet; but in April it ascends to about 8000 feet in the side valleys. The natives train the Sparrow-Hawk (*Accipiter nisus*) to take the Magpie with.

A nest with five eggs, hard-set, taken in a mulberry-tree at Nonval (5600 feet), 9th May.

A nest with three eggs (quite fresh) taken at Dayoor (5200 feet) 25th May. The bird had evidently not done laying.

143. *PYRRHOCORAX GRACULUS* (Linn.)

Common at the lower elevations in December, January, February, and March, when they commit great havoc on the newly sown corn. In summer they keep entirely to the mountains.

144. *PYRRHOCORAX ALPINUS* (Koch).

Seems to care less for cold than the Red-billed Chough, only appearing in the main valley during the time of extremest cold, and then only in small numbers.

145. *STURNUS VULGARIS*, Linn.

Occasional specimens secured during the winter, but not common.

146. STURNUS PURPURASCENS, Gould.

A winter visitant. The specimens obtained are precisely similar to those got in Yarkund.

147. TEMENUCHUS PAGODARUM (Gmel.).

One or two procurable each summer, at all elevations up to 8000 feet, where cattle are herded.

148. PASTOR ROSEUS (Linn.).

Two young birds of the year shot on the 19th and 28th August; a few others in immature plumage were also seen at the same time, but no adults.

149. PASSER INDICUS, Jard. & Selb.

Begin to disappear in November, and leave Gilgit altogether during the time of extreme cold. In both years they reappeared in small numbers on 22nd February, but did not become common till the end of March. Dr. Scully writes that he has procured specimens all through the last winter; they were certainly not there in the two preceding winters.

150. PASSER HISPANIOLENSIS, Temm.

Two specimens only procured in the winter. The female differs from that of *P. indicus* in having a stronger bill, and having a very faint supercilium; otherwise the markings are so similar that it is not distinguishable.

151. PETRONIA STULTA (Gm.).

This Sparrow was tolerably common in December, January, and February. It was generally in flocks of fifteen or sixteen, and prefers open stony places. I never saw it near trees.

♂. Length $6\frac{5}{8}$ inches, wing $4\frac{1}{3}$, tail $2\frac{3}{8}$, tarsus $\frac{3}{4}$, bill in front $\frac{1}{2}$.

♀. Length $6\frac{1}{4}$, wing 4, tail $2\frac{5}{16}$, tarsus $\frac{5}{8}$, bill in front $\frac{1}{2}$.

152. EMBERIZA LEUCOCEPHALA, Gmel.

Occasional specimens secured in December, January, February, and March. The specimens obtained in the latter month are assuming the breeding-plumage.

153. EMBERIZA STRACHEYI, Moore.

Extremely common all the winter, but goes higher about

the beginning of April, and breeds at about 8000 feet. I took two nests (second brood, no doubt) in the first week of August. Both were on the ground, under a stone. One had only one egg in it, the other three.

I also took a nest with three fresh eggs in it on 1st June at 9000 feet, and took two nests, each with three eggs quite fresh, on 23rd and 24th June.

The colouring of all Gilgit specimens is paler than that of Cashmere or Simla individuals.

[The collection contains a large series of specimens of this bird, which I have compared and found identical with the plate of *E. stracheyi* by Wolff in the 'Proceedings' of the Zoological Society for 1855. The difference pointed out by Dresser in the 'Birds of Europe,' the absence of the *white* spots on the wing-coverts, holds good; but in some winter specimens the pale fulvous spots approach very closely to the white spots of *E. cia*. There is, however, a further and well-marked difference in the pure white of the nuchal end of the supercilium in *E. stracheyi* as compared with the grey of that part in *E. cia*, giving in the former bird three pure white marks on the side of the head, instead of two. In *E. stracheyi* the entire supercilium throughout its length is pure white.—G. F. L. M.]

154. *EMBERIZA HORTULANA*, Linn.

A single specimen, a female or young male, shot at Chimooghur, in the main valley, ten miles from the Indus, on 26th May. Evidently migrating at the time. Length 6·4 inches, wing 3·2, tail 2·6, tarsus ·75. Irides dark brown.

The head is considerably battered; but the yellow tone of the markings on the throat, the greenish tone of the head, as far as traceable, and the strongly defined striations of the upper plumage serve sufficiently to distinguish it from *E. buchanani*.

The tints agree well with those of the figure of the young bird given by Dresser in the 'Birds of Europe,' pl. 99.

155. *EMBERIZA BUCHANANI*, Blyth.

Not observed in the first year; but a number appeared in the beginning of September in the second year.

156. *EMBERIZA STEWARTI*, Blyth.

A summer visitant. Appears in April, and is very common in May and June, when it replaces *E. stracheyi* at the lower elevations. Breeds below 6000 feet.

157. *EMBERIZA SCHÆNICLUS*, Linn.

Scarce; and never more than a single one was seen at a time. Four specimens were secured in January, February, and March. Both these and my Turkestan specimens are paler-coloured birds than English specimens, the ruddy tints on the wings and back being especially lighter; but they correspond fairly well with a specimen in the Indian Museum at Calcutta, obtained by exchange from Mr. Dresser, and labelled "*E. schœniclus*, var. B, Pallas, Lake Baikal."

158. *EUSPIZA LUTEOLA* (Sparrm.).

A few specimens shot in the end of August and September were all in immature plumage; no adult males were either procured or observed.

159. *EUSPIZA MELANOCEPHALA* (Scopoli).

A single specimen, an immature female, was procured by me on the 5th October.

160. *MYCEROBAS CARNIPES* (Hodgs.).

Common at all seasons in the pine-forests above 8000 feet, seldom coming lower down even in winter. On one occasion only, in the severe winter of 1877-78, I saw and shot a pair in the main valley at 5000 feet elevation.

These birds belong to the western form which has been separated as *M. speculigerus* (Brandt). They differ from the usual eastern type in being of larger size; the colour of the abdomen is more vivid, and of a more decided yellow; the yellowish edgings of the tertiaries and wing-coverts are more conspicuous and much broader, and the bill more full and bulged. They correspond exactly with the figures in Gould's 'Birds of Asia,' which were taken from specimens from the Altai. But as the late Mr. Mandelli obtained in Sikkim specimens which correspond to the western form, there do not seem to be sufficient grounds for retaining *M. speculigerus* as a distinct species.

The males measure from 8·9 to 9·7 inches in length (the average being 9·4), with the wing from 4·55 to 4·8, and the tail from 3·9 to 4·3. In the females the wing measures from 4·35 to 4·65 inches, and the tail from 3·9 to 4.

Breeding males shot in June and July were still in female plumage, which is apparently not assumed till after the first breeding-season. Jerdon is wrong in stating that the sexes are alike. In the females the sooty black is replaced by brownish ash, and the feathers of the cheeks, throat, and breast pale-centred.

161. *PYRRHULA AURANTIACA*, Gould.

This Bullfinch appears to be very local, but in certain localities is common, especially among pine-forests. They are permanent residents.

The upper tail-coverts are velvet-black, not white (as stated by Jerdon).

162. *ERYTHROSPIZA INCARNATA* (Sev.).

A constant resident, but seldom comes below 6000 feet, except in severe weather. I found it at about 10,000 feet in the Astor valley in June, when it was no doubt breeding. I have seldom seen it except in large flocks of twenty or thirty. On 29th April I shot seven out of a flock, which all turned out to be males.

The plate in Père David's 'Oiseaux de la Chine' represents the bird as far darker than any of the Gilgit specimens, especially about the cheeks and nape.

163. *CARPODACUS RUBICILLUS* (Güld.).

Very common in Gilgit, in flocks of twenty and thirty, from the middle of December to the beginning of March in 1877-78, but never seen again at any season or elevation. They prefer stony places, and keep to the same place day after day. There were places where I could always depend on finding a flock.

I have now a large series of this bird from Turkestan, Ladak, the valley of the Yarkund river near its source, and the Oxus valley. The plumage varies greatly in both sexes according to age, season, and locality—so much so that I

had some difficulty in believing that they are all of the same species. The specimens from Turkestan are extremely pale, and the rose-tints are very delicate ; so that Severtzoff seems quite justified in distinguishing them as *C. pallidus*. The Gilgit specimens are darker ; and those of Ladak and the Oxus valley are darker still. Specimens from the last two places have black instead of brown legs, and appear slightly larger than the others, but not markedly so.

The young male retains the striations on the back for some time after the rose-markings on the head and breast are complete. The striations of the females, both on back and breast, vary greatly according to age.

164. CARPODACUS ERYTHRINUS (Pall.).

A summer visitor. Earliest appearance noted April 22. Breeds at 10,000 feet in July and August. The male does not get the roseate plumage till the second year, apparently. Several males with fully developed testes, shot in July, and evidently breeding, were still in female plumage. They probably get the rosy plumage just after the first breeding-season, and by a change of colour, not by moult, as some shot in May show a faint rosy tinge against the light. About the beginning of September they leave the hills and come down into the valley.

The young bird has two well-defined wing-bars formed by rufous edgings to the wing-coverts ; and the tertiaries are broadly tipped with the same colour ; the striations of the upper plumage are darker, broader, and more pronounced.

An albino (pure cream-colour, with hazel-brown irides) was shot on September 7 by Dr. Scully. Its plumage was much abraded. Several nests were found, all situated within a foot of the ground, either in low bushes or among the stems of coarse grass, about 2 feet high in scrub-jungle. The nest is a neat cup-shaped structure of grass, lined with the finer roots and stems only, except in one instance, in which a good deal of hair is mixed with the lining ; the interior is from 2 to 2½ inches wide, and 1¼ deep. The eggs are blue, of a purer and slightly deeper shade than those of *Trochalopteron*

lineatum, with chocolate spots sparingly scattered over them, chiefly towards the larger end. In one out of a dozen the spots are almost entirely wanting; in some they are paler, almost of a sienna-tint, in others nearly black, while on a few there are also one or two pale purplish spots and fine reddish scrawls at the larger end; and in these the spots are almost confined to the larger end, in an ill-defined zone or cap.

Nests were taken at 10,000 feet elevation on July 16, 17, 20, 21, 29, and 30, all with eggs mostly fresh.

165. *PROPASSER RHODOCHLAMYS* (Brandt).

Is a permanent resident, but is very seldom seen below 6000 feet. The measurements of the numerous specimens obtained correspond exactly with those given by Jerdon, and the bird itself with Gould's plate in the 'Birds of Asia,' also with the plate of *Carpodacus sophiæ* in Bonaparte's 'Monographie des Loxiens,' and with a specimen in the Museum from the hills north of Simla.

As in *C. erythrinus*, the males do not get their full plumage until after the first breeding-season. Several males with fully-developed testes were shot in May and June in female plumage.

166. *PROPASSER FRONTALIS* (Blyth).

[Mr. Hume has, I think, prematurely expunged this species from the Indian list. A pair of Rose Finches, male and female, in full breeding-plumage, shot at Gilgit in June 1878, were brought down with the collection, which, after a careful comparison with some specimens of *P. thura* from the late Mr. Mandelli's collection, I decided must stand as *P. frontalis* (Blyth). Unfortunately the notes taken of the comparison were accidentally destroyed after leaving Calcutta, and as the specimens of *P. thura* were returned, I can now only give the distinctive features with reference to Jerdon's meagre description.

The male corresponds with Blyth's description of *P. frontalis*, except that the feathers of the top of the head, instead of being plain dark brown, are paler-edged, similarly to,

though more narrowly than, those of the back. The feathers of the chin, throat, and neck are not silvery-white-shafted, but have a silvery streak near the tip of each feather; and this silvery streaking hardly extends onto the breast. It also shows whitish at the centre of the abdomen near the vent, and at the hinder end of the superciliary streak.

It differs from *P. thura* in having a broad frontal band rose-pink, in the lores and a narrow band round the base of the bill crimson, and in the silvery streaks on the chin, throat, and breast, while on the back the general hue is much less dark.

The female answers well to Blyth's description, and differs from that of *P. thura* chiefly in lacking the broad pale supercilium, and in the ground-colour of the face, abdomen, and lower tail-coverts being white instead of light yellowish brown. —G. F. L. M.]

167. PYRRHOSPIZA PUNICEA (Hodgs.).

These birds seem loath to leave the mountains. I never saw them below 10,000 feet, except in one place (the mouth of a ravine leading into the plain), and there only in the middle of January 1878, at the time of greatest cold.

The markings of the back in winter are much more defined than in the summer plumage; and one female specimen has broad buff tips to the wing-coverts, which form a conspicuous wing-bar. The outer edges of the secondaries are also broadly tipped with whitish buff.

The plate of 'this species in Bonaparte and Schlegel's 'Monographie des Loxiens' shows the upper plumage as darker and more uniform, while the red tint of the underparts extends further down the breast, and is less scarlet in tint than in any of the specimens obtained in Gilgit.

168. CARDUELIS CANICEPS (Vig.).

Small flocks appeared from time to time during the season of extreme cold, but never seemed to remain more than two or three days at a time. They breed at about 9000 feet, and are common in Cashmere in summer as well as in winter. The lores are black, interrupting the scarlet round the bill, which latter is rather wider in the male than in the female.

169. *METOPONIA PUSILLA* (Pall.).

Appear at intervals during the winter, when driven down by very severe weather. I shot two out of a flock on May 21 at 5000 feet (Gilgit), where they had been attracted by the ripe mulberries; but I have seen them high up in the snow, at over 9000 feet, in February. They breed at about that height; and in August the young birds collect in large flocks of fifty or sixty, when not a single old bird can be seen among them. They seem to acquire the red head in the first year, as I have only procured one specimen without it (a young male shot in Astor about November 20) later than August.

On July 28 I had a nest brought me, which my shikari had been watching several days. He shot one of the pair of old birds about the nest, which turned out to be the male of *M. pusilla*. The nest contained three eggs perfectly fresh (and the number was apparently not complete), in colour a dull stone-white, with small red-brown spots dotted about the larger end. The nest was about 20 feet from the ground, in a cedar tree (*Juniperus excelsa*), neatly made of grass fibres, and lined thickly with sheep's wool, and matted on the outside with soft bits of decayed wood, so as to look like the bark of a tree.

170. *LINARIA BREVIROSTRIS* (Gould).

Since I left Gilgit Dr. Scully writes:—"How on earth did you miss this bird? I have preserved over sixty specimens, and have left off shooting it. It is one of the very commonest birds about now (January)."

As this is a bird I know well, having procured many specimens further eastward, it is hardly possible that I should have missed it, had it been as common as Dr. Scully says in the two preceding winters. I should be more inclined to regard this as an instance of the changes that take place in the migrations of birds owing to increase or decrease in the severity of the winter season.

171. *LINARIA CANNABINA* (Linn.).

Fifteen or sixteen specimens were procured in January and February 1878, when the winter was an exceptionally severe

one ; and many more were seen. They were generally in small flocks of four or five, and rather difficult to approach, keeping on open stony places. They are very restless birds, and constantly take short flights, uttering a twittering note. A specimen was apparently secured in Sind during the same winter (*vide* 'Stray Feathers,' vol. vii. p. 122) ; Mr. Hume, speaking of the specimen in question, says that, as far as plumage is concerned, it is absolutely identical with European specimens. This is not the case with these, which are all markedly paler and with more white about them than three English specimens I have compared them with. In the English specimens the white edgings to the primaries, which, when the wing is closed, form a conspicuous bar less than $\frac{1}{2}$ inch long, in these form a patch $1\frac{1}{2}$ inch in length. All the primaries are margined with white to the tip, whereas in the English specimens none are. The centre tail-feathers, which in the English bird have very faint pale margins, in these have a broad margin of snowy white for half the web.

The large amount of white on the upper tail-coverts, and the broad white margins to all the tail-feathers, are very conspicuous when the bird is flying. In size, also, they differ from the English specimens, the wing of several of the males being fully $3\frac{1}{4}$ inches, and the tail $2\frac{1}{2}$ inches.

Dr. Scully writes that they have been common during the present winter, though during the winter of 1879-80 none were seen.

172. FRINGILLA MONTIFRINGILLA, Linn.

A few specimens were shot in March and April on their way northwards in both years. Mr. Hume doubts the occurrence of this Finch in Indian limits (*Str. Feathers*, vol. vii. p. 465). These had most undoubtedly come from the south. A male, shot on April 15, had the breeding-plumage nearly complete.

The wing-bar formed by the white spot on the outer web near the base of the quills does not extend right across the wing ; it is absent from the first three primaries, commencing on the fourth. In other respects these birds correspond exactly with the description given by Dresser in the 'Birds of Europe.'

†173. *LEUCOSTICTE BRANDTI*, Sev.

This is the bird which I procured in 18874 in the mountains west of Kashghar, and took for *M. hæmatopygia*; but M. Severtzoff, on examining my collection, identified it as *Leucosticte brandti*. It first appeared about January 20, single specimens being mixed up in flocks of *Carpodacus rubicillus*. It gradually became commoner; but I never saw more than three or four together at a time. It disappeared about March 10.

Measurements of a male taken in the flesh:—Length $7\frac{1}{2}$ inches, wing $4\frac{7}{8}$, tail $3\frac{1}{4}$, tarsus $\frac{7}{8}$, bill at gape nearly $\frac{1}{2}$ inch; irides grey-brown. Out of eleven specimens secured, none had a black bill like those obtained by me in 1874 in the end of March and beginning of April. It is probably distinctive of the breeding-plumage.

This species can be readily distinguished from *M. hæmatopygia* by its greater size and the rose-coloured shoulder-patches. The rose tints on the rump are paler and less conspicuous than in *M. hæmatopygia*; and the general tone of the plumage is conspicuously paler.

174. *FRINGILLAUDA SORDIDA* (Stoliczka).

A continuous resident in the district, appearing in flocks of forty or fifty at the lower elevations during the winter. In summer it goes up to 10,000 feet and higher. The young birds apparently do not acquire the rufous-brown head till the second year. I saw an immense flock of this Finch at Astor in November, and picked up twenty-six after one shot. This is probably the red-headed Sparrow said to appear in Leh in winter. The axillaries in this species are white instead of yellow, as in *F. nemoricola*.

175. *CALANDRELLA BRACHYDACTYLA* (Leisl.).

A few appeared in March, but were not seen again in Gilgit. In September and October I obtained a few higher up the Indus, towards Iskardo. The March specimens are in very faded plumage; those got in the autumn are in fresh plumage with the rufous edgings to the feathers perfect. The males are 6.5 inches long, wing 3.75 to 4.0, tail 2.4 to

2·5 ; the females 6 to 6·25 inches long, wing 3·3 to 3·4, tail 2·25 to 2·45.

176. *MELANOCORYPHA BIMACULATA* (Ménétr.).

Three specimens were secured in the months of December and March, all males. In one specimen the height of the bill at front is 0·33 inch ; no others seen.

177. *ALAUDULA PISPOLETTA* (Pall.).

Dr. Scully writes that he has obtained a specimen since I left Gilgit, with short hind claw, spotted breast, and secondaries 0·75 inch shorter than the primaries.

178. *ALAUDULA ADAMSI*, Hume.

Since I left Gilgit Dr. Scully has obtained specimens of this Lark.

179. *OTOCORYS PENICILLATA* (Gould).

Extremely common from November till the end of March, when, after forming large flocks of over a hundred, it suddenly disappears. Out of many specimens shot, none appears to answer to the description of *O. longirostris*.

180. *ALAUDA DULCIVOX*, Hodgs.

This large Skylark is a winter visitant only, first appearing in November and leaving by the end of March. In March, when assuming breeding-plumage, just before leaving, it gets much darker, but never apparently so dark as *A. guttata*, from which it can readily be distinguished by its superior size. In males the wing measures from $4\frac{1}{4}$ to $4\frac{1}{6}$ inches, in females from 4 to $4\frac{1}{4}$; the tarsus measures from $\frac{3}{4}$ to $\frac{7}{8}$, being generally slightly smaller than in *A. guttata* ; bill at front barely $\frac{1}{2}$, generally $\frac{7}{16}$. Of the large primaries the second is slightly the longest, and the first slightly shorter than the third ; sometimes all three are equal ; the fourth is fully $\frac{1}{4}$ inch shorter than the second ; and there is more than $\frac{1}{2}$ inch between the tertiaries and primaries. The outer web of the first developed primary is white in winter, and creamy buff in summer. The distinctions pointed out by Brooks (S. F. i. 484) between this species and *A. arvensis* hold good in the series of fifteen specimens of the former brought down.

181. *ALAUDA GUTTATA*, Brooks.

This Skylark is a summer visitant only, appearing at the end of March and leaving about October; the first specimen was obtained on the 29th March, the same day as the last of *A. dulcivox*. One specimen was obtained in September, on the 27th, but none later. In males the wing measures from $3\frac{3}{4}$ to $4\frac{3}{16}$ inches. I have never procured one yet with a wing measuring fully $4\frac{1}{4}$. In females it does not exceed $3\frac{3}{4}$, tarsus $\frac{7}{8}$. Bill at front from $\frac{7}{16}$ to nearly $\frac{1}{2}$ inch.

Of the developed primaries the second is slightly longest, first and third subequal; sometimes all three are subequal; the fourth is $\frac{1}{16}$ inch shorter than the second. Tertiaries reach to less than $\frac{3}{4}$ inch from the primaries. In summer the outer web of first primary is rufous. Tail more furcate than in *A. dulcivox*, from which it is generally distinguished by its darker colour and smaller wing. Outer tail-feathers white, and not fulvescent.

In one specimen, a female shot in September, the plumage is fresh and perfect, showing broad pale edgings on the tertiaries, which are rounded, the edgings of the primaries are more rufous, the outer web of the first large primary being rosy, the patch behind the eye is fulvescent instead of white, and the dark markings on the breast are more shaded off and not so decided, the centre tail-feathers are black instead of dark brown, and the outer tail-feathers fulvescent white. Wing $3\frac{1}{2}$ inches, tail $2\frac{1}{2}$, tarsus $\frac{3}{4}$, bill at front $\frac{1}{2}$. Of the large primaries the second and third are equal, and first and fourth are equal, with $\frac{5}{8}$ inch between the tertiaries and primaries. The legs are much more transparent-looking than in the other specimens, all of which are in worn and faded plumage, with the feathers much abraded.

The distinctions pointed out by Brooks between *A. guttata* and *A. gulgula* hold good, except that the tendency of the spots to coalesce at the sides of the breast, which the specific name has reference to, is not at all well marked. The most notable distinctive points are the albescent hue of the plumage of the underparts and the larger size.

182. *GALERITA CRISTATA* (Linn.).

This is one of the very few birds that remain in Gilgit all the year round; it is very common.

183. *ALSOCOMUS HODGSONI* (Vig.).

Procured only in the forests at about 8000 feet elevation, where it seems tolerably common. A male shot in July lacks the white spotting on the flanks described by Jerdon.

184. *COLUMBA CASIOTIS* (Bonap.).

A single specimen, a female, belonging to this species was procured in the main valley on 24th April. Jerdon's description hardly represents correctly the amount of white on the wing. The outermost secondary-coverts are pure white, forming a conspicuous longitudinal patch extending for over $3\frac{1}{2}$ inches down from the carpal joint. The primaries are margined with white, each except the second less conspicuously than the one before it, gradually shading into ashy, but not sufficiently broad to form a bar (as stated by Jerdon). The neck-patch is clayey buff or ochraceous; and the green gloss prevails above the patch, and the amethystine below. This style of coloration of the neck-patch also appears in specimens from Kumaon; and the distinction referred to by Jerdon, as pointed out by Blyth, does not hold good. Weight $11\frac{3}{4}$ ounces, length 16·8 inches, wing 10·1, tail 6·8, tarsus 1·3, bill at gape 1·1, bill from front 0·85. Irides yellowish white. A few other specimens were seen at elevations of over 8000 feet during the summer, but not one during the winter.

185. *COLUMBA INTERMEDIA*, Strickl.

In November the pigeons begin to collect in flocks, which increase in size as the winter goes on.

At first they are mostly composed of *C. intermedia*, with a single specimen of *C. rupestris* in the flock. Gradually *C. rupestris* gets commoner, and a few specimens of *C. livia* appear. When the corn is sown the Pigeons collect in great flocks of several hundreds, and settle on the newly sown fields till it seems as if not a single grain would be left.

Till the end of April they appear at intervals whenever heavy weather in the mountains drives them in. In the

beginning of May they pair; and a large number of them leave the main valley in the summer for higher elevations.

The specimens of *C. intermedia* killed in summer show the ashy grey rump, tending in some almost to white, but never so marked as in *C. livia*.

186. *COLUMBA LIVIA*, Bp.

A few specimens seen both in summer and winter.

187. *COLUMBA RUPESTRIS*, Pall.

C. rupestris never appears in large numbers; and I have never seen a flock of this species which had not specimens of one or the other before-mentioned Pigeons with it.

It has a conspicuous white shoulder-patch in winter plumage, which is not mentioned by Jerdon. Wing 9 inches, tarsus $1\frac{1}{8}$, bill at gape $\frac{7}{8}$.

188. *COLUMBA LEUCONOTA*, Vig.

Not very common. Never seen below 10,000 feet. The whole head and neck are ashy black—not the top of the head and ear-coverts only, as described by Jerdon. The underparts are white, shading into ashy on the abdomen and under tail-coverts.

189. *TURTUR RUPICOLA* (Pallas).

A summer visitor; appears about 1st May.

190. *TURTUR AURITA* (Gray).

Appears about the same time as *T. rupicola*.

♂. Length 12 inches, wing 7·1, tail 4·9, tarsus 0·85.

♀. Length 11·4 inches, wing 6·75, tail 4·7, tarsus 0·80.

Irides orange, feet and legs lake-red.

191. *TURTUR CAMBAYENSIS* (Gmel.).

One single specimen, killed in the beginning of March among a flock of *T. suratensis*, in no way differs from the type commonly met with in India.

192. *TURTUR SURATENSIS* (Gmel.).

Never very common, but seen from time to time at all seasons of the year, in small flocks of four or five.

[This is nearer the typical form of *T. suratensis* than the

Spotted Dove of the plains, which approaches *T. tigrina*. In one specimen the buff spots on the feathers are enlarged so as almost to make the back uniform, while all the tints are paler and more delicate than usual; four other specimens are undistinguishable from those generally obtained in the western Himalayas.—G. F. L. M.]

193. *TETRAOGALLUS HIMALAYENSIS* (Gray).

Common everywhere in favourable ground. It makes its nest at about 8000 or 9000 feet, and breeds early. Directly the young are hatched they go up to the lower edge of the snow—in fact, as high as they can. I procured a nestling about three days old on 28th May. Six eggs (which were hatched two days afterwards under a hen) were brought in the last week in June; the old bird was also snared and brought in, and being let loose she wandered round the tent all night.

I have never seen these birds in large flocks like *T. tibetanus*; they are generally in pairs only. In the depth of winter a few collect together, but when disturbed separate at once.

In the nestling the lower plumage is silky white unspotted; the upper part white tinged with rufescent, here and there variegated with dark-brown markings, darkest and best-defined on the head. Wings and tail pale rufous, mottled with dark brown, except on the terminal fringe.

194. *CACCABIS CHUKOR* (Gray).

Very common. In summer it breeds at all elevations from 5000 feet to 10,000 feet, the nests at the highest elevations being hatched latest. At 5000 feet some of the young birds are able to fly by the first week in June. I took a single fresh egg out of a new nest on the 5th May.

A nestling obtained on the 22nd July at about 6000 feet elevation, with the wing only 3·6 inches long, unable to fly, had the top of the head earthy brown with a slight rufescent tinge, ear-coverts deep brown, chin, throat, and cheeks white, the rest of the plumage pale earthy brown, each feather with a pale buffy-white tip, largest on the abdomen, where the brown is almost lost; upper plumage rather darker, barred with pale buff, the bars edged with narrow interrupted

blackish lines ; primaries hair-brown, with large irregular buff spots on the outer margin.

195. *COTURNIX COMMUNIS* (Bonn.).

Seen at intervals all through the year. In April becomes common, and breeds in May. Eleven eggs ready to hatch were brought to me on 26th June.

196. *OTIS TETRAX* (Linn.).

A male in winter plumage was shot on 27th March on a stony plain overgrown in places with coarse grass, about six miles from Gilgit. It weighed $21\frac{1}{2}$ ounces. Another was seen at the same time. The natives say that a pair or two are to be found in the same place every summer ; so they probably breed there ; but I doubt if the bird is to be found anywhere else in the district, as the ground is hardly suitable to it.

197. *CHARADRIUS FULVUS*, Gm.

After I left Gilgit, Dr. Scully secured a specimen during the autumn migration.

198. *ÆGIALITIS CANTIANA* (Lath.).

A single specimen, a female, procured at Gilgit on the 20th September.

199. *ÆGIALITIS PHILIPPENSIS* (Scop.).

Tolerably common in April and May, in full breeding-plumage.

200. *ÆGIALITIS HIATICULA* (Linn.).

Dr. Scully writes that after my leaving Gilgit he secured a specimen of this species.

201. *VANELLUS VULGARIS* (Bechst.).

A few are to be seen at all times scattered about during the winter. In March they collect into flocks of twenty or thirty, and disappear about the 25th.

Jerdon mentions that the only distinction between the sexes is in the size of the crest ; but the few specimens collected seem to show that the females never have the lores, chin, and throat black like the male. The colours of the male also are much more intense.

202. *CHETTUSIA GREGARIA* (Pallas).

Two specimens were secured, a male and a female, one in each year, in the beginning of April, when the birds were apparently passing up from the south. The male had another one with it at the time of being shot. No others were seen alive; but one was picked up apparently freshly killed by a Falcon. Both specimens are in full summer plumage. The axillaries and inner lining of the wing are pure spotless white.

203. *LOBIVANELLUS INDICUS* (Bodd.).*

A single one was heard, but not secured, by Dr. Scully on 2nd June, after dusk. There could not be much chance of mistaking the cry for that of any other bird.

204. *ANTHROPOIDES VIRGO* (Linn.).

One specimen was brought to me alive in September. Two flocks were seen on 29th August late in the evening, in very heavy weather, flying west. They appeared to have just come down from the Pamirs by the Hunza valley.

205. *SCOLOPAX RUSTICULA*, Linn.

A winter visitant. During the severe winter of 1877-78 Woodcocks were not uncommon, generally keeping to the small watercourses made for irrigational purposes. I have never seen any in the summer, though they probably breed in the valley. A single specimen in the collection, shot in January, has the pale tone of colouring which characterizes so many of the birds in this locality.

206. *GALLINAGO SOLITARIA* (Hodgs.).

A few occur in winter and spring, at heights of from 5000 to 9000 feet. I have never noticed them in the summer. A specimen shot in January has the pale lines formed by the edges of the outer dorsal and scapulary feathers nearly pure white, and a good deal of white intermixed with the pale bands on the wing-coverts and secondaries.

207. *GALLINAGO SCOLOPACINA*, Bonap.

The ground is not sufficiently favourable to induce Snipe

* [I subsequently obtained a specimen.—J. S.]

to remain in any numbers; but a few are always to be found all through the winter, from 2nd September to the end of April, along the watercourses and edges of rice-fields.

[A point of distinction between this species and *G. stenura* (Temminck), in addition to those which have been noticed by various writers, is the conspicuous white tipping on the secondaries in *G. scolopacina*, corresponding to the wide white tipping of its under wing-coverts.—G. F. L. M.]

208. *LIMOSA ÆGOCEPHALA* (Linn.).

After I left Gilgit Dr Scully secured a specimen during the autumn migration.

209. *MACHETES PUGNAX* (Linn.).

A male was procured in September, apparently on its way southwards. The colours are somewhat more vivid than those of the winter plumage; but the ruff and other breeding-insignia are wanting. (Wing 7·25 inches, tail 2·7, tarsus 1·75, bill at front 1·5). A female was subsequently secured in the same month—length 9·5 inches, wing 6, tail 2·4, tarsus 1·6; irides brown.

210. *TRINGA SUBARQUATA*, Güld.

A single specimen, a male, shot on 7th September, evidently passing southwards.

211. *TRINGA MINUTA*, Leisl.

Since my leaving Gilgit, Dr. Scully writes that he found the Little Stint very common during the end of autumn and beginning of winter.

212. *TRINGA TEMMINCKI*, Leisl.

Four specimens obtained in May in transition plumage—two on the 14th, and two on the 22nd.

Dimensions:—♂, length 6·2, wing 3·8, tail 2·12, tarsus 0·7; ♀, length 6·1, wing 3·75, tail 2·05, tarsus 0·7. Irises brown.

213. *ACTITIS GLAREOLA* (Linn.).

Several specimens occurred about 23rd April; but not noticed at other times.

214. *ACTITIS OCHROPUS* (Linn.).

One specimen killed in January. Very common in April,

disappears May, June, and July, reappears in considerable numbers in the middle of August.

215. *TRINGOIDES HYPOLEUCUS* (Linn.).

Tolerably common about middle of May. A few stragglers noticed during the winter. Considerable numbers suddenly appeared in the middle of May for a short time.

The dates of the northern migrations of these Waders are well marked, and differ a good deal. *Actitis ochropus* appears in considerable numbers about second week in April, and disappears a little before the end of May. A few stragglers remain all the winter, and also are found in favourable places above 8000 feet in summer.

A. glareola appears about the end of April, and disappears by the middle of May. No stragglers seen at any other time.

T. hypoleucus and *Tringa temmincki* appear together in considerable numbers about 15th May, and disappear after a short stay.

216. *TOTANUS GLOTTIS* (Linn.).

A single specimen, a male, was procured in September, apparently on its way southwards.

217. *TOTANUS FUSCUS* (Linn.).

Not common. One specimen secured on 23rd April, a male in transition plumage, sooty black feathers appearing on the head and undersurface. Secondaries incompletely barred with white, and wing-coverts with a row of white spots on the outer margin, upper tail-coverts and all the tail barred with white, under tail-coverts with a few narrow brown bars.

218. *TOTANUS CALIDRIS* (Linn.).

A single specimen of the common Redshanks has been obtained by Dr. Scully since I left Gilgit.

219. *HIMANTOPUS CANDIDUS* (Bonn.).

One specimen, a female, shot in April; no others seen.

220. *FULICA ATRA*, Linn.

Common in November and December, but seems to go further south during the great cold, and reappears in March

and April on its way back to its breeding-grounds, when it is very common. It probably breeds at the big lakes at the head of the valley.

221. *GALLINULA CHLOROPUS* (Linn.).

Common in spring and autumn. A young bird procured 26th August.

222. *PORZANA MARUETTA*, Leach.

Though I have procured specimens of three kinds of Rails, strange to say, I have never seen one about, nor has a man who has been employed in shooting birds daily for nearly two years ever procured one. All the specimens I have seen have been brought in alive by natives. I imagine that a few of each species breed here every year. They are certainly only summer visitors.

Two of this kind were brought to me, a male and a female—one in the middle of April, the other at the beginning of July.

223. *PORZANA PYGMÆA* (Naum.).

One specimen, a male, was brought to me alive on 20th May, when it was evidently breeding.

224. *PORZANA PARVA* (Scop.).

Since my leaving Gilgit, Dr. Scully writes that he has secured an immature specimen which he believes to belong to this species. Wing 4 inches.

225. *CREX PRATENSIS*, Bechst.

Since my leaving Gilgit, Dr. Scully writes that he secured a specimen during the autumn migration.

226. *RALLUS AQUATICUS*, Linn.

A single specimen which I refer to this species was brought to Dr. Scully alive, by a native, on the 25th April. Length 10·9 inches, expanse 15·25, wing 4·65, tail 2·3, tarsus 1·6, middle toe, 1·75, tibia (bare) 0·5, bill—from front 1·54, gape 1·7, depth 0·35.

227. *CICONIA NIGRA*, Linn.

Flocks of Black Storks appeared at intervals in February,

March, and April. One was brought to me alive on 14th April, with the glossy-bronze markings on the head and neck very vivid.

228. *ARDEA CINEREA*, Linn.

Hérons appear in the end of September, apparently on their way to the south, and again in the end of February, when they are common till the end of March, during which month they collect in flocks of ten or twelve, and gradually disappear, a few being seen till the beginning of May; but as they are known to breed in Kashmir, it is probable that a few pairs breed in Gilgit also. Most of them appear to go northwards, to breed near the lakes at the head of the Gilgit valley, which are favourite breeding-places for water-fowl.

229. *ARDETTA MINUTA* (Linn.).

After I left Gilgit, Dr. Scully secured a specimen in the month of October.

230. *NYCTICORAX GRISEUS* (Linn.).

One specimen brought in alive to Dr. Scully in the first week in May. A young bird in the collection, shot on the 8th July, has the wing 10 inches.

231. *ANSER INDICUS* (Lath.).

I have several times observed flocks of geese flying over Gilgit, but have never shot any in the district. Higher up the valley I saw a number and shot several specimens of this bird, which is said to breed on the Shandur lake in May. This was the only Goose I saw on the Pamir in April 1874.

232. *CASARCA RUTILA* (Pall.).

A pair occasionally seen in autumn and spring.

233. *SPATULA CLYPEATA* (Linn.).

The first Duck of the season, seen 30th August, looked like *S. clypeata*; and others were noticed in autumn and spring. One specimen shot.

234. *ANAS BOSCAS*, Linn.

Appears about the middle of October, and is the common

Duck to be seen during the winter. It remains till nearly the end of April.

235. *CHAULELASMUS STREPERUS* (Linn.).

Since my leaving Gilgit, Dr. Scully writes that he has secured a specimen of the Gadwal.

236. *DAFILEA ACUTA* (Linn.).

The Pintail is seen at intervals during the winter, but is never common. It remains much later than *Anas boscas*. I have seen it as late as the middle of April.

237. *MARECA PENELOPE* (Linn.).

A single specimen of the Wigeon has been procured by Dr. Scully since I left Gilgit.

238. *QUERQUEDULA CRECCA* (Linn.).

To be seen at intervals all through the winter, from the middle of September to the middle of April, but is never very common or in parties of more than eight or ten, generally less.

239. *QUERQUEDULA CIRCIA* (Linn.).

Seen occasionally, but is never very common. I shot a pair in the middle of September, and one in the end of March.

One shot 2nd September, and a flight seen flying from the north at the same time. I rather think this Teal only appears very early and very late but does not remain all through the winter.

240. *BRANTA RUFINA* (Pall.).

I believe I identified two of this species among a flock of Ducks in March, but was not able to shoot a specimen.

241. *FULIGULA NYROCA* (Göld.).

On one occasion in March I saw some of the White-eyed Duck among a flock of Teal; and Dr. Scully has since written to me that he has secured a specimen.

242. *FULIGULA CRISTATA* (Linn.).

Dr. Scully writes that he has procured a specimen since I left Gilgit.

243. *MERGUS CASTOR* (Linn.).

I have several times come across the Merganser in winter, in the mountain-streams, but never secured a specimen.

244. *PODICEPS PHILIPPENSIS*, Gmel.

One specimen was secured by Dr. Scully out of a small flock on 29th March; but they are seldom seen, and apparently do not stop at all on their passage through.

245. *LARUS AFFINIS*, Reinh.

A single specimen which appears to be *L. leucophæus* (Licht.), but which now, according to Mr. Howard Saunders (Stray Feathers, vii. p. 463), stands as *L. affinis*, was procured. Top of the head almost white, sinciput and ear-coverts darker, neck and upper plumage generally of various shades of brown, each feather edged with whitish except on the back, where the edgings are grey. Primaries brownish black, faintly tipped with whitish; secondaries brown, conspicuously tipped and fringed on the outer margin with white; inner web broadly margined with white, the basal portion being completely white; greater primary coverts brown bordered with white; secondary coverts broadly edged with grey; lesser coverts coloured like the upper surface; tertiaries and scapulars brown tipped with white; upper tail-coverts white, with a few brown spots; tail pure white at base, with a broad black terminal band; undersurface white, suffused with brown on the neck and sides of the breast; under tail-coverts white, with a large brown spot on outer web near tip; axillaries pure white, a few of them with a brown spot at tip; under wing-coverts white, barred with brown.

Dimensions (taken from dried skin)—wing 17·15 inches, tail 7·3, tarsus 2·65 (longer by 0·4 than the middle toe with claw, which, according to Mr. Howard Saunders, serves to distinguish this species from *L. cachinnans* and *L. argentatus*). Bill blackish, with horny tips, yellowish at base of lower mandible; length from gape 3·25 inches, legs and feet yellow.

246. GELOCHELIDON ANGLICA (Mont.).

Terns are seldom seen, and never linger on their passage through. One specimen secured 23rd April.

247. HYDROCHELIDON HYBRIDA (Pall.).

Two specimens secured 22nd April, when a party of eight or ten were seen.

In a young bird procured by Dr. Scully, 29th August, the bill is black, not red, as suggested by Hume (*Stray Feathers*, vii. p. 445), and the feet are dark brown with a reddish tinge.

A Tern which looked like *Sterna fluviatilis* was seen by me on 23rd August, evidently passing through on its way south.

248. HYDROCHELIDON NIGRA (Linn.).

Since my leaving Gilgit, Dr. Scully writes that he has secured five specimens, which he believes to belong to this species or to *H. leucoptera*. The measurements vary from 8·2 to 9 inches in the wing, and from 0·74 to 0·9 in the tarsus.

249. GRACULUS CARBO (Linn.).

Several times I have seen a Cormorant which I assign to this species; but I have never secured a specimen. On 12th September I saw a flock of five in the Sai valley.

IV.—*Ornithological Letters from the Pacific*.—Nos. V. & VI.*

By OTTO FINSCH, Ph.D., H.M.B.O.U., &c.

No. V. *Kushai*.

Pacific Ocean, on board the German schooner
'Francisca.' March 1st, 1880.

WE left Taluit (Marshall group) on February 15th, and made a fine and pleasant voyage of five days only to Kushai. The weather was exceedingly nice, and the sea was smooth; but no birds were seen, except a few Tropic-birds (*Phaeton flavirostris* and *P. aethereus*). On the morning of the 20th of February we sighted the island of Kushai, which, with its mountains covered all over with dense woods, offers a most delightful prospect, especially for those who have been living

* For No. IV. see Vol. IV. p. 429.